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A SURVEY OF PROSTATIC ENLARGEMENT AND ITS TREATMENT *

BY

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The fact that I propose to give a general survey of prostatic enlargement, and note any advances that have been made in our understanding of it and in our methods of treating it, is an indication that I have reached that time of life at which a man is prone to look back into the past and to contrast what he thought once with what he thinks now. And, in spite of the big gaps that still remain in our knowledge and of the imperfections of our treatment, this survey will give cause for satisfaction. The last ten years have witnessed a great activity not only in our surgery but also in our knowledge of the aetiology of prostatic enlargement. We have made definite progress and, unless I am mistaken, are on the threshold of still greater advances.

Some sixteen years ago I had the honour of delivering a Hunterian lecture before the Royal College of Surgeons on "The Nature and Causes of Old Age Enlargement of the Prostate." When I came to assess the result of my two years' work on this subject it amounted to little more than an assertion that every theory that had so far been advanced to explain the nature and causes of prostatic enlargement was inadequate. We were not only in ignorance of its aetiology; we did not even know what it was. The only positive statement in my lecture was the following, which I give verbatim:

"The close dependence of the prostate on the ductless glands, during its period of development, affords sufficient ground for considering carefully the possibility that enlargement may be associated with some change in the endocrine system. The menopause in the female is generally accompanied by a temporary loss of endocrine balance, and it is not improbable that a similar state of affairs may arise during the period of sexual decline in the male. . . . The condition of the endocrine glands in cases of prostatic enlargement offers a fruitful field for research."

This at the time was a new point of view. Up till then enlargement of the prostate had been considered to be an inflammatory lesion (Ciechanowsky and Rothschild, 1903), an adenoma (Cohnheim, Rindfleisch, and Velpeau), or a form of degeneration associated with arteriosclerosis (Launois, 1885). My suggestion that it might be the result of a disturbance of the endocrine balance was a blind shot that modern research has shown to have been very near the mark. I did not know at the time that Paul (1910) of Liverpool had twelve years previously been struck by the resemblance between the enlarged prostate and involutionary cystic mastitis, and had suggested that enlargement was an involutionary lesion similar to that of the female breast at the time of the menopause.

It is difficult to say what particular subsequent research was responsible for establishing beyond doubt the endocrine factor in enlargement, but if emphasis is to be placed on the work of any one researcher it would have to be on that of Lacassagne, in 1933. While experimenting on the carcinogenetic powers of various sterols, Lacassagne found that if oestrone was administered over long periods to mice it produced an overgrowth of the dorsal prostatic lobes. This interesting discovery was confirmed independently by de Jongh (1933), by Burrows and Kennaway (1934), and by other workers.

Care must be exercised in applying these results to the problems of human enlargement. The dorsal prostatic lobe of a mouse is a specialized gland, secreting a semen coagulant. There is no true homologue of this in man. Zuckerman and Groome (1937) have, however, shown that prostatic enlargement can be produced in dogs by injections of oestrone, and that the histology of this artificially produced enlargement is similar to that which often occurs spontaneously in this animal. Parkes and Zuckerman (1935) have also studied the histology of the oestrone-stimulated prostates of monkeys, and found that they undergo a fibro-muscular overgrowth and a stratification of the uterus masculinus.

These experiments suggest that enlargement of the prostate in man may also be due to the action of an excess of oestrogenic substance. It has of course long been known that the male body forms oestrogenic as well as male hormones, and that both of these substances could be extracted from the testis. It is therefore not illogical to suppose that an upset in the normal balance between these two antagonistic principles may be the cause of prostatic enlargement. But so far no direct confirmation of this theory has been obtained from any quantitative estimate of the hormones formed by sufferers from prostatic enlargement. Hamilton and his co-workers (1936) failed to extract any oestrogenic substance from seven enlarged prostates, and Lower (1933) stated that the concentration of male hormone in the blood of prostatics was even higher than normal. Buehler (1933) has, however,

* A paper read to the Gloucestershire Branch of the British Medical Association.

asserted that this is only true of the blood of the younger prostatics, and does not apply to older patients. Direct evidence is therefore still lacking that artificially produced prostatic enlargement in animals is a true analogue of the condition found in man, and we shall have to wait for further evidence before we can feel fully satisfied that we have really found the key to the riddle. Our uncertainty need not, however, prevent us from attempting, in the light of these animal experiments, treatment along hormonic lines. This subject will now be considered.

Hormonic Treatment of the Enlarged Prostate

The fact that the testicle forms both male and female hormones supplies a rationale for the old treatment of prostatic enlargement by means of castration. No modern surgeon would care to revive this practice, even although in many cases it appears to have achieved its object—namely, the shrinkage of the prostate. He prefers rather to aim at restoring the normal balance between the two principles by injecting male hormone. De Jongh has shown experimentally that male hormone does possess the power to inhibit the action of oestrone on the prostate, and Parkes and Zuckerman (1935) have confirmed his findings in the case of monkeys. Incidentally, it would appear that progestin is capable of exerting the same antagonistic action as male hormone, thus supplying another example of interchangeability of hormone in the two sexes.

There is plenty of experimental support, therefore, for the attempt to deal with human enlargement by means of endocrine therapy, either directly by injection of male hormone or else indirectly by the use of gonadotropic substances. Until recently these attempts have been handicapped by the difficulty of injecting enough hormone to produce an effect, but with improvements in methods of extraction and of manufacture this difficulty is being overcome. The Ciba Company have now prepared ampoules containing 50 mg. of testosterone propionate in sterile oil. A large supply of this has been put at the disposal of the Medical Research Council, and some half-dozen of us are testing it out on carefully investigated cases of prostatic enlargement. What will be the outcome of this trial remains to be seen. It must be remembered that second only in importance to the actual hormone preparation given is the method of giving it.

Important work, which may have a bearing on future lines of treatment, is at present being done by Parkes, Zondek, and others on the rate of absorption of hormone after injection. The ideal to be aimed at is to ensure a slow continuous absorption of small amounts over a long period, a result that has been obtained in animals by injecting compressed tablets of hormone into the muscle. It is possible, therefore, that new methods of administration will in the future play a part in the hormonic treatment of prostatic enlargement.

The Steinach Operation

Bilateral vasectomy was used as long ago as 1890 by Lennander of Upsala in the treatment of prostatic enlargement as a substitute for castration. Interest in this operation was revived by the writings of Steinach in 1918, and it has since been used extensively as a treatment of both premature senility and prostatic enlargement on the assumption that it increased the output of male hormone in the testicle. The original Steinach operation of ligature of the vas not having given satisfactory results, Niehans in 1927 substituted for it ligature of the efferent ducts of the testicle. It is difficult to see why a ligature in this situation should prove more effective than a ligature placed higher up on the vas. It is even uncertain that a cutting off of the external secretion of the testicle is necessarily followed by an increased output of hormone. Nevertheless, Niehans and other operators have claimed many successes for this simple form of treatment.

The proof of the pudding lies in the eating; the value of Niehans's operation can only be assessed by the results that are obtained from it. The ingenious endocrinological arguments put forward by Niehans as a justification of his operation carry with them little conviction, for in the present state of endocrinology it is possible to bolster up almost any thesis by choosing those observations that happen to support it and rejecting those that are opposed to it. We would be wise, therefore, to judge the Niehans operation by the results that follow it rather than by the endocrinological arguments that support it. What, then, are the clinical results of the ligature operation that goes under the name of Steinach II? Niehans himself gives no actual statistics, but makes only the following general statement:

"Since 1927 I have operated on about six hundred prostatic patients in my clinic at Clarens and in the hospitals at Vevey and Montreux, and my experience for ten years empowers me to assert that Steinach's ligature II is particularly suitable for the soft adenoma of the prostate so often encountered, and equally suitable for myomata, whilst its influence is less apparent or *nil* on small hard fibromata. . . . In fact, the great majority of hundreds of patients with adenoma of the prostate who have undergone Steinach ligature II see their bladder troubles gradually disappear, often indeed very quickly. They pass urine more easily and in greater quantities, consequently less often. Strangury ceases and the bladder is completely emptied. The prostate decreases in size."

Niehans's statements have found little favour either in Europe or in America, and few urologists of repute have even given his methods a trial. Personally I feel that, however incredulous one may be about any form of treatment, it should not be condemned offhand without any attempt having been made to assess its value. I have therefore during the last two years carried out Niehans's ligature operation on a number of patients who have come to me with the express wish that I should do so. Out of some thirty patients within my range of observation, three only would appear to have benefited from their operation and to have maintained their improvement. Three or four others have asserted that they were slightly better, and the remainder have either expressed doubt whether any change had occurred or else have been sure that it had not.

The only statistics bearing on the subject of the Steinach II operation that I can find are those published by Elliot-Smith (1936). He performed the operation on twenty patients, most of whom were admitted to hospital as emergency cases, with acute retention. Three died and seventeen left hospital with four ounces or less of residual urine. It was noticeable that several patients with complete retention passed urine on the same day as the operation. This makes it likely that the improvement was due to a reflex action on the sphincter mechanism at the neck of the bladder. It is inconceivable that in so short a time any change could have been effected through the influence of hormones.

The Surgery of Prostatic Obstruction

It is unnecessary in this paper to describe at length the work of Bellfield and Fuller in America and of McGill and Freyer in this country in laying the foundations of

prostatic surgery. Here we are not concerned with foundations, but with the building that is being erected on those foundations. What form is it now taking? Where have we failed in our building and where have we succeeded?

In the *British Medical Journal* of July 20, 1901, Freyer first advocated and described the technique of suprapubic enucleation of the prostate. It was a crude and blind proceeding, guided only by the sense of touch and entailing the insertion of a finger in the rectum. After enucleation no attempt was made to deal with haemorrhage by the usual method of ligature or suture, reliance being placed on the haemostatic processes of the body to bring bleeding to an end. Drainage was provided for by means of a large tube inserted not in the most dependent but in the highest part of the field of operation. Although the results were as a rule excellent, no conscientious surgeon could feel entirely satisfied with the operation described by Freyer, since it violated almost every surgical principle. Obviously it could only be regarded as a stepping-stone to a more finished operation.

We will now consider the efforts that have been made to get rid of the shortcomings of the Freyer technique and try to estimate what success, if any, has attended them.

The Perineal Operation

In this country these efforts have been mainly directed to a more finished toilet of the prostatic bed and to the adoption of better methods of arresting post-operative haemorrhage. We have hitherto never departed very far from the original technique, nor abandoned for long the suprapubic approach to the prostate. In America the suprapubic route has been seriously challenged by the perineal operation elaborated by Proust, and strongly advocated by H. H. Young of Baltimore. There are many points in its favour, notably the better drainage provided by a wound in the perineum, and for a time the protagonists of the suprapubic and of the perineal routes seemed evenly matched. Of late years, however, the protagonists of the suprapubic operation have steadily gained ground, and it is now chiefly through the influence of H. H. Young and of those trained in his clinic that perineal prostatectomy still remains the routine operation for the relief of prostatic obstruction in certain American clinics. In this country it has never gained any hold. A few of us have at one time or another been attracted by the advantages of the perineal operation and have provided ourselves with the necessary equipment for carrying it out, but at the end of a year or two this equipment has usually found its way into our surgical lumber-rooms.

Suprapubic Prostatectomy

The first serious effort to eliminate the more obvious shortcomings of the Freyer operation was made by the late Sir J. Thomson-Walker in 1928. By means of a larger suprapubic incision, introducing a suitable retractor, and placing the patient in the exaggerated Trendelenburg position after the prostate had been enucleated, the field of operation could be inspected, torn shreds of tissue cut away so as to reduce subsequent infection, and bleeding points ligatured. Haemostasis was completed by the insertion of a continuous suture along the posterior segment of the bladder outlet. The originator of this open operation hoped by these means to reduce post-operative haemorrhage and sepsis to a minimum, and to banish entirely that occasional sequel to operation, post-prostatectomy obstruction.

Ten years have elapsed since Thomson-Walker introduced his open operation, and experience has shown that it affords no certain guarantee against the occurrence of any of the accidents that its originator hoped to prevent. Severe haemorrhage, sepsis, and post-prostatectomy obstruction have all occurred after an open operation. Their incidence may be less frequent, but none of these accidents has been entirely eliminated, and many of us have come to the conclusion that the extra half-hour required for the open operation is not justified by the benefits it confers. Where speed is necessary the old Freyer operation still remains preferable. A glance at the last annual surgical report of St. Peter's Hospital, in which the results of the various operations performed there during the year are admirably set out, serves to confirm this view. There it will be seen that the highest mortality rate is that which follows the performance of the Thomson-Walker operation. Undoubtedly its originator was right in attempting to eliminate the defects of the Freyer operation, but unfortunately his efforts to do so have not met with the success that he hoped for.

The Harris Technique

To a worker in Australia—namely, the late S. H. Harris (1933, 1935) of Melbourne—must be accredited the next serious effort to get rid of the glaring defects of the Freyer technique. Dissatisfied with the half-measures of Thomson-Walker, he aimed by means of carefully placed sutures to arrest haemorrhage so completely that the bladder could be closed by primary suture. Young's boomerang needle, a clever invention that had been originally devised to aid in the difficult task of closing fistulae left by the perineal operation, provided him with the instrument necessary to his purpose. With the boomerang needle it was possible to take a big bite of the tissues round the prostatic cavity, to underpin all bleeding-points, and to reconstitute the neck of the bladder. The suture on which Harris placed most emphasis was a median posterior suture so inserted as to carry a tongue of mucous membrane and muscle deep down into the prostatic cavity. This "trigonization suture," as he termed it, served to re-form the floor of the urethra. Lateral stitches were then inserted in such a manner as to draw together the walls of the cavity and to help to obliterate it. Drainage was provided for by an indwelling urethral catheter anchored in position by means of a stitch passed through its eye and brought out through the abdominal wall. The bladder was then closed by primary suture. Harris claimed excellent results from his operation, and published a remarkably low mortality rate. That ugly trio of the Freyer operation—haemorrhage, sepsis, and post-prostatectomy obstruction—had apparently been conquered, and the author of the new operation waited confidently for his colleagues' blessing on the new technique.

The urological world was slow to take note of his writings. In opening a discussion on prostatectomy at the Centenary Meeting of the B.M.A., held in London in July, 1932, Mr. Swift Joly commented unfavourably on the Harris operation. He expressed the opinion that attempts to perform plastic operations on the prostatic cavity resulted only in an increase of sepsis. Other speakers were inclined to agree with him. Harris was bitterly disappointed.

Soon afterwards the tide began to turn. Clifford Morson and Ogier Ward gave his method a trial, and later published good results from the new technique. Other British urologists followed suit, and at the annual meeting

of the Urological Section of the Royal Society of Medicine a complete reversal of opinion was found to have taken place. It was the majority of speakers who now upheld the Harris operation, the minority who opposed it. But it was very noticeable that everyone who was using the new operation had considerably modified Harris's technique, one having eliminated the posterior trigonization suture, another the postero-lateral, and a third the antero-lateral. Moreover, only a few had dared to follow Harris's lead in carrying out primary closure of the bladder as a routine measure. Usually a small suprapubic drainage-tube was inserted and retained during the first few days of convalescence.

Present Position of the Harris Operation

Operations are subject to the same laws as those that control other human inventions; at first a new operation meets with a certain resistance, and then if it has any merit it is acclaimed as a great advance that will supersede all other methods. Finally it reaches the period of equilibrium or of decline: it either takes a permanent place in the repertoire of the surgeon or else sinks into oblivion. This I believe will be the history of the Harris technique, but at the present moment I am not prepared to say what the final stage will be. I am sure, however, that in the exact form in which Harris planned it his operation will not survive, for it suffers from a great defect, a defect from which the Freyer operation is altogether free. In inserting some of the sutures the boomerang needle passes well outside the limits of the urinary tract, and is therefore capable of carrying with it infection—if infection there be—into the cellular tissues of the pelvis. That this is not merely a theoretical objection but a very real danger is shown by the fact that practically every operator who has used the Harris technique at all extensively has met with cases of pelvic cellulitis. It can of course be urged that pelvic cellulitis may occur after every type of prostatectomy, but the consensus of opinion favours the view that it is more frequent after the employment of the Harris technique. This is a very serious objection, and Harris's insistence on the necessity for the careful preoperative treatment of infection does not remove it. However carefully we prepare our patients we cannot guarantee that we have rendered the bladder aseptic.

A second shortcoming of the operation is that while the lateral sutures certainly diminish bleeding they do not obliterate the prostatic cavity. All that they do is to draw the bladder together over the hole left by the prostate, unless, of course, the boomerang needle is inserted so wide that it goes well outside the prostatic capsule. Such a big excursion of the needle not only increases the risk of pelvic cellulitis but also, when the stitches are tied, turns in a great part of the base of the bladder and causes a marked deformity of that viscus. Although Harris himself showed no hesitation in inserting these widely placed sutures, I cannot feel that so gross a deformity of the bladder is desirable.

Because of these weak points in the Harris operation some of those who had previously adopted it have given it up, while others have so greatly modified the method that it can no longer be called a Harris operation. My own position is that I still employ a modified Harris technique, but only in those favourable cases in which I am fully satisfied that the patient is able to support a longer operation. When a two-stage operation is advisable, or when I feel any doubt about the patient's capacity to withstand a more formidable procedure, I have fallen back again on an operation that in its essentials resembles the old defective method of Freyer. For me the technique of Harris, which at one time I hailed as a great advance in prostatic surgery, appears to be a method of definite but of limited utility. I look upon it as a portent of things to come rather than as a method that has already arrived. It indicates the lines along which we must continue to work—a direction and not a goal.

On the Continent and across the Atlantic the Harris method has met with no favour. Efforts to advance in prostatic surgery have in the United States taken another direction, more particularly the development of perurethral methods of treatment. This important branch of prostatic surgery will now be discussed.

Perurethral Operations on the Prostate

Again it will be unnecessary to deal with the foundation of perurethral surgery laid by Bottini, Civeálé, Young, Caulk, and Luys, for we are mainly concerned with modern developments. After the usual period of resistance this method of dealing with prostatic obstruction received widespread recognition rather suddenly. By some enthusiasts it was even proclaimed to be a method that within a decade would entirely replace all others. Prostatectomy would then retain merely a historic interest. This has only proved to be approximately true in the case of the Mayo Clinic, at which about 98 per cent. of prostates are now being dealt with by perurethral methods. Elsewhere it has been felt, first, that resection is not a universal substitute for prostatectomy but a valuable alternative to be used in certain cases: and, secondly, that it is not a minor proceeding immune from all dangers. At a very early stage after the spread of perurethral methods disturbing reports of deaths from haemorrhage and sepsis destroyed the illusion that the resectoscope was an instrument that could be used by all and sundry with light-hearted enthusiasm. Even to the experienced urologist a perurethral resection often proves to be a difficult operation. In the hands of the inexpert the resectoscope can be an instrument that is more deadly than the knife. Years of practice are necessary in order to become master of it.

As in the case of prostatectomy, the chief dangers of perurethral resection have proved to be haemorrhage and sepsis; and it has been to eliminate these, and at the same time to increase the facility with which prostatic tissue is removed, that our efforts have in the main been directed. All techniques that entailed the leaving behind of a large area of coagulated tissue have now been abandoned on account of the sepsis that they encouraged. Of the many instruments that have been devised two have now definitely gained the ascendancy; these are the McCarthy resectotome and the Thompson punch. In this country we prefer a modification of the former instrument, not necessarily because it is the better weapon, but because we find the direct-vision ocular system of the Thompson punch more difficult to use. From the point of view of sepsis, however, the Thompson punch, which employs a cold knife for cutting and only uses a coagulating current for stopping haemorrhage, is probably the better instrument.

On the whole it may be said that in this country urologists have reached an agreement not only as to the best method of carrying out perurethral resection, but also as to the indications for doing so. Only in America do we find discrepancies of opinion so wide as to result in the perurethral method being used only

exceptionally at one clinic and as a routine procedure in another. Here we regard it as a treatment that is suited to certain prostates and to certain circumstances. Perurethral resection is no longer on its trial, but has established for itself a definite place in the surgery of the prostate.

Conclusions

Having surveyed the work that has been carried out by innumerable researchers in the laboratory and in the operating theatre during the last twenty years, I feel that we have no reason to be dissatisfied with the results. We have made definite progress, both in our understanding of the aetiology of enlargement and in our methods of dealing with it. The investigations of the biologist and of the biochemist are now leading us in a direction which may well mean that within a few years we shall be able to prevent its occurrence, and possibly cure the condition once it has arisen. In the meantime, close co-operation between the clinicians and the designers of instruments has provided us with a valuable alternative method of surgical intervention in the shape of perurethral resection. Finally it may be said that even if the efforts of prostatectomists to rid the original Freyer operation of its shortcomings have not so far met with success, there is no reason to disbelieve that in the end this also will be achieved.

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The fourth annual meeting of French radio-electrologists will be held in the physics theatre of the Paris Faculty of Medicine from October 5 to 8. Professor Joliot-Curie will deliver an opening address on the biological applications of the neutrons and the artificial radio-elements, including the therapeutical hypotheses concerned. Professor Didier will speak on the radiological methods of examination of sections of organisms, Professor Baudouin and Dr. Fischgold will present a communication on the bio-electrical phenomena of the nervous system and their possible applications in practice, Dr. Gaston Daniel of Marseilles will discuss radiotherapy as an antidote to inflammation. Lectures on various aspects of biophysiology will be given by Professors Lamarque, Soula, Marques, and Strohl ry Djourno. Visits will be paid to institutes and hospitals, and there will be entertainments and excursions. Full information may be obtained from Dr. Delherm, 1, Rue Las Cases, Paris, 7e.

ANAEMIA AND THE GASTRO-INTESTINAL TRACT*

BY

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It is recognized to-day that the commonest cause of anaemia is a lack of one or other of the essential haemopoietic principles. The known haemopoietic principles are: (1) iron; (2) the P.A. substance in liver effective in Addisonian pernicious anaemia; (3) vitamin C. Minute quantities of other minerals, such as copper, cobalt, and manganese, may be required for normal haemopoiesis, but are usually present in sufficient quantities even in poor diets, since only extremely small amounts are needed. Thyroxine is often included, but its effect is probably an indirect one (Bomford, 1938). The body is dependent for its supplies of these haemopoietic principles upon the food ingested, and subsequently digested and absorbed in the intestinal canal. It is therefore not surprising that there is a close relationship between anaemia and disturbances of gastro-intestinal function, since abnormalities in food intake, digestion, and absorption must result in a deficiency of these principles. It is essential in treating a patient with a deficiency anaemia to recognize not only the type of anaemia—that is, whether it is due to lack of iron, liver, or vitamin C—but also to determine how the deficiency is brought about, so that an attempt may be made to correct the disordered mechanism. It must also be remembered that an adequate supply of haemopoietic principles may be converted into an inadequate supply if the demands are increased. Thus iron-deficiency anaemias are extremely rare in men unless there is some source of chronic haemorrhage. On the other hand, iron-deficiency anaemias are common in women of the working classes because the iron content of the diet is not sufficient to make good the continuous iron drain of normal menstruation (Davidson and Fullerton, 1938).

For purposes of discussion the disturbances of gastro-intestinal function that may convert an adequate into an inadequate diet, so causing what Castle has called a conditioned deficiency, may be grouped as follows: (1) haemorrhage; (2) deficiency of gastric digestion; (3) deficiency of intestinal absorption; (4) production of toxic substances. So far as is known such factors influence only the utilization of iron and the P.A. principle. There is no evidence that intestinal abnormalities affect the utilization of vitamin C.

Haemorrhage

The commonest sources of gastro-intestinal haemorrhage are bleeding gastric and duodenal ulcers and haemorrhoids. The latter, especially in men, are an important cause of severe iron-deficiency anaemia. It should always be remembered that in tropical countries bleeding from hookworm infestation associated with a poor diet is a possible cause of hypochromic anaemia. An analysis of the stools for occult blood is an essential investigation in all cases of anaemia of unknown aetiology.

Deficiency of Gastric Digestion

Deficiency of gastric digestion may be due to: (*a*) organic lesions; (*b*) diminished secretion of hydrochloric acid; (*c*) diminished secretion of the intrinsic factor of Castle.

* A paper read to the Exeter Division of the British Medical Association on March 10, 1938.

(*a*) ORGANIC LESIONS

Within the term "organic lesions" are included new growths of the stomach and complete or partial gastric resection. Such lesions cause anaemia in part by diminishing gastric secretion and in part by altering intestinal function. They respond well, so far as the blood picture is concerned, to treatment with iron and liver extract.

(*b*) DIMINISHED SECRETION OF HYDROCHLORIC ACID

There is a high incidence of achlorhydria associated with all types of anaemia. It is invariably present in Addisonian pernicious anaemia, and is often found in iron-deficiency anaemia of women and infants and in anaemia associated with hookworm infestation, sepsis, and nephritis. It was thought at one time to play such an important part in the aetiology of the iron-deficiency anaemias that the type occurring in women was called by some workers "achlorhydric anaemia." The evidence available to-day suggests that inability to secrete acid favours the development of iron deficiency, especially when the diet is defective, but that iron deficiency often occurs when the acid secretion is excellent. Barer and Fowler (1937) have recently made elaborate iron-balance observations on people with and without achlorhydria. They found that people with achlorhydria retain less iron on an ordinary diet than those without achlorhydria. Medicinal doses of hydrochloric acid do not increase retention. It must be remembered, however, that such acid is quickly neutralized by the stomach contents. If food is given buffered to an acid *p*H (Mettier and Minot, 1931) iron is more readily absorbed than if it is given buffered to an alkaline *p*H. Barer and Fowler (1937) found that when large quantities of iron are given the amount retained was unaffected by the gastric acidity, being the same approximately in people with normal acid secretion and in those with achlorhydria. These observations suggest, therefore, that in practice the use of hydrochloric acid will not help the absorption of iron either from the ordinary diet or from medicinal supplies. It is, however, impracticable and also unnecessary to give a diet buffered to an acid point, since medicinal iron administered in large amounts appears to be well absorbed.

As a result of their observations Barer and Fowler suggest that in iron-deficiency anaemias there may be a lack of some as yet unidentified substance in the gastric secretion. Evidence on this point is at present conflicting and unsatisfactory.

(*c*) DIMINISHED SECRETION OF THE "INTRINSIC FACTOR OF CASTLE"

Addisonian pernicious anaemia is dependent upon a deficiency of such a substance, called by Castle "the intrinsic factor." In a series of classical experiments Castle showed that if beef-steak was fed to patients with pernicious anaemia the blood picture was unaffected. If normal gastric juice was fed the blood picture was still unaffected, but if beef-steak predigested with normal gastric juice was given the blood picture became normal. Predigestion with gastric juice from patients with pernicious anaemia, or with hydrochloric acid and pepsin alone, was ineffective. He concluded, therefore, that the fundamental abnormality in pernicious anaemia was an inability on the part of the stomach to secrete some principle essential for the digestion of certain foodstuffs and the consequent elaboration of the active liver principle. It is probable that inability to secrete the intrinsic factor is not absolute—that is, that some patients are able to excrete small quantities and that the amount may vary from time to time (Goldhamer, 1936). This would account for the occurrence of spontaneous remissions before the days of liver therapy. Goldhamer (1936) goes so far as to suggest that there is a constant relation between the blood level and the volume of gastric secretion. The cause of this inability to secrete the intrinsic factor remains obscure. Gastroscopic examination of the stomach shows atrophic gastritis affecting the fundus and cardiac portions in pernicious anaemia and to some extent in iron-deficiency anaemias. Histological examination of the stomach in pernicious anaemia shows atrophy both of mucosa and of muscle coats (Magnus and Ungley, 1938), affecting the fundus and cardiac portions only. Since all experimental evidence (Meulengracht, 1935) suggests that the intrinsic factor is secreted by the pyloric glands and Brunner's glands, this anatomical abnormality is at present difficult to interpret. There is no evidence that after treatment the power to secrete the intrinsic factor ever returns to normal, though it may improve slightly. Goldhamer (1937), who has estimated the quantity of gastric juice before and after liver treatment, has obtained only an insignificant increase. The average gastric-juice volume in normal subjects he found was 150 c.cm. per hour; in pernicious anaemia patients it was 20 c.cm. in relapse and 46 c.cm. in remission. It is therefore essential to continue treatment with liver extract indefinitely in true Addisonian pernicious anaemia.

Anaemias associated with gastric dysfunction are usually simple—that is, there is lack of the P.A. factor alone or of iron alone. Therapy takes the form, therefore, of either liver extract or iron. This is true particularly of iron deficiency. In practice it is sometimes found that patients with Addisonian pernicious anaemia have also some degree of iron deficiency. The red cell count reaches a level of 4,000,000 per c.mm. or slightly higher when liver extract is given in adequate doses, but even with increased dosage it will not rise further. Treatment with large doses of iron in addition to liver extract, however, will often result in satisfactory haematological improvement. Realization of this is important, since it is absolutely essential, if subacute combined degeneration is not to develop or grow worse when already present, that a red cell count of 5,000,000 per c.mm. and a haemoglobin of 100 per cent. should be maintained in all patients with Addisonian pernicious anaemia.

Deficiency of Intestinal Absorption

It is known that in many patients hyperchromic anaemia responds better to liver extract given by parenteral injection than to liver extract given by mouth, while anaemia is often found in association with various disturbances of intestinal function. It is concluded, therefore, that failure to absorb haemopoietic principles may play a part in the development of anaemias. The following abnormalities of intestinal function are thought to hinder absorption: (*a*) changes in the *p*H of the intestinal contents; (*b*) increased motility; (*c*) abnormalities of muscle tone; (*d*) abnormalities of intestinal mucosa.

(*a*) CHANGES IN *p*H

Gastric secretion of hydrochloric acid, so far as is known at present, regulates the *p*H of the intestinal contents. Evidence showing that small doses of iron are better absorbed from an acid medium and that unless food is given in a buffered medium it is impossible to alter the *p*H of the intestinal contents has been already discussed.

(b) INCREASED MOTILITY

Increased motility of the intestinal contents is a more frequent cause of anaemia than is generally recognized. Following gastric operations such as gastro-enterostomy, gastrojejunostomy, or partial resection, anaemia often develops. Many studies have been made as to the cause of this anaemia, but only one abnormality has been demonstrated to occur at all constantly. Hartfall (1934) found in a large series of such cases that, on screening, a barium meal appeared to fall through the small intestine—that is, there was greatly increased motility. Little time is available, therefore, for absorption of essential principles when they occur in normal amounts. If given in large quantities they are apparently absorbed more easily. The mechanism of this increased absorption in the presence of large amounts is not clear. Such increased motility is probably a factor also in the production of the anaemia of sprue and the anaemias associated with severe diarrhoea of any type.

(c) ABNORMALITIES OF MUSCLE TONE

In the case of sprue abnormalities of muscle tone and movement have been demonstrated during a relapse, and have been shown to be absent during remissions (Mackie, Miller, and Rhoads, 1935). No increased motility was demonstrated, but in a series of seventeen cases the following changes were almost invariably present:

(i) Great variation in contour and size of the lumen; (ii) segmentation of the column of barium; (iii) pocketing of barium; (iv) mucosal changes shown by a distorted mucosal pattern. Studies by barium enema frequently demonstrated a dilated and somewhat redundant colon. Following treatment, considerable if not complete improvement was noted. Since many patients with sprue respond better to liver extracts when given by injection than when given by mouth, it is thought that some failure of intestinal absorption must be present, probably dependent, at least in part, on these demonstrable changes in muscle function.

(d) ABNORMALITIES OF THE MUCOSA

Anaemia is common in all forms of colitis. Here probably mucosal as well as muscular abnormalities play their part in hindering absorption of essential foodstuffs.

In idiopathic steatorrhoea there is failure to absorb many essential substances from the intestinal canal, not only haemopoietic principles. The cause of such failure remains obscure. Other intestinal abnormalities, such as multiple resection, multiple adhesions, stenosis of the canal, or fistula formation, may all result in anaemia, presumably through interference with intestinal absorption through one or other of the abnormalities discussed.

It has been suggested that lack of ascorbic acid may result in a failure of intestinal absorption, especially of iron. It is known that, apart from glutathione, ascorbic acid is the most powerful reducing agent present in the body (Hopkins and Morgan, 1936). The mucosa of the small intestine is unusually rich in ascorbic acid, and since iron is absorbed in the ferrous form it has been thought that a deficiency of this powerful reducing agent in the intestinal canal might result in a failure to absorb sufficient quantities of iron (Macfarlane, 1936). This view, however, at present lacks any direct experimental support.

The changes in intestinal function already discussed might be expected to affect the absorption of many substances simultaneously rather than to exert a selective action. This is often found to be the case. A mixed type of anaemia is common in anaemias of intestinal origin—that is, there is a deficiency of both iron and the P.A. principle. The recognition of such a dual anaemia may sometimes direct attention to the intestinal canal when a lesion there has not been suspected. Stained blood films in such cases show the small pale cells containing little haemoglobin which are characteristic of iron-deficiency anaemias together with the large well-coloured cells full of haemoglobin which are characteristic of P.A.-deficiency anaemia. Such cases require treatment with both iron and liver. Their recognition is therefore important. When such a picture is seen in the stained film an intestinal abnormality should at once be suspected. A special examination should be made in all patients with a known gastro-intestinal lesion to discover if this dual deficiency is present. It may occur with only a mild degree of anaemia, but administration of both liver and iron in such cases will result in remarkable clinical improvement. Such treatment has to be continued indefinitely, since it can only replace a deficiency and does not affect the disturbed mechanism.

Production of Toxic Substances

Recent experimental work has shown that the production of toxic substances in the intestine associated with a deficiency of certain food substances in the diet may cause anaemia, possibly of a haemolytic type. It may be necessary in the future to think in terms of conditioned toxicities as well as of conditioned deficiencies. Rhoads (1937) found that when he fed indol to dogs on a normal diet the dogs remained well, but when he fed indol to dogs on a deficient diet a severe anaemia rapidly developed. This was cured by liver extract and its onset prevented by the addition of liver to the diet. Indol is a substance which may be present in the normal intestine, and under some circumstances may occur in large amounts. These observations are too recent to enable us to do more than note them. They serve, however, to emphasize the extraordinary importance of an adequate diet in maintaining normal health, and are a yet further indication of the close relationship of normal gastro-intestinal function to normal haemopoiesis.

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Cremation as the most hygienic means for disposal of the dead was advocated by Dr. W. G. Clark, deputy medical officer of health for Edinburgh, at the joint conference of the National Association of Cemetery and Crematorium Superintendents and the Federation of Cremation Authorities in Great Britain, held in Edinburgh last week. Dr. Douglas Kerr, medical referee to the Edinburgh Corporation, said that cremation was advancing so rapidly, becoming so widespread, and such extensive practical experience of the working of the present Act had accumulated, that fresh legislation could be foreseen in the near future.

FURTHER OBSERVATIONS ON BENZEDRINE

BY

E. W. ANDERSON, M.D., M.R.C.P., D.P.M.

The interest in benzedrine, particularly in its use in psychiatry, would seem to justify yet another contribution to the literature. The following is an account of a study of the effects of benzedrine, over a period of fourteen months or so, on a group of patients at the Cassel Hospital who were suffering chiefly from the minor forms of mental disorder.

Thirty-three patients in all were given benzedrine orally in doses ranging from 5 to 45 mg. In addition, eight normal subjects were given the drug. Among the patients twenty-one were male and twelve female. The diagnostic grouping was as follows: twenty-eight depressives, two "anxiety states," three schizophrenics, and one organic (manic-depressive with disseminated sclerosis).

At the beginning of this study the pressor effect of the drug was studied as well as its central effects, and careful observations of the blood pressure and the mental state were made throughout the day. The blood pressure was taken each morning at 9 o'clock, in the lying and standing positions, the third reading being taken in each case. The drug was then given, the variations in dosage being concealed from the patient by using tablets of a neutral substance (calcium lactate) as well, so that the same number of tablets was given each time. The normal variations of the blood pressure in the individual were also determined. These observations presented nothing new, and will not be discussed further. After a time, therefore, we ceased to study the blood pressure alterations and devoted our interest entirely to the psychological changes, and it is these which form the main topic of this paper.

After Davidoff and Reifenstein's (1937) excellent paper and a recent leading article on benzedrine in the *British Medical Journal* (1937) it is unnecessary to review the literature at length. The two main effects of this sympathomimetic drug—the pressor and the central action—are now familiar. Its use in narcolepsy (Prinzmetal and Bloomberg, 1935; Ulrich, Trapp, and Vidgoff, 1936), post-encephalitic Parkinsonism (Solomon, Mitchell, and Prinzmetal, 1937), intestinal spasm and hence its employment in gastro-intestinal radiology (Myerson and Ritvo, 1936), as a vasoconstrictor in rhinology (Scarano and others, 1934), and its effect on the gastric juices (Myerson, Rinkel, and Dameshek, 1936), now require no further mention. A more recent non-psychiatric use is in orthostatic hypotension (Korns and Randall, 1937), in which favourable results have been observed; it seems, however, inferior to ephedrine in the treatment of this condition. Although containing a benzene ring no effect on the blood constituents has been observed either at the time or months later (Schube, Raskin, and Campbell, 1937), although before this Myerson, Loman, and Dameshek (1936) had reported dramatic changes, including a polycythaemia in some cases, as well as a striking leucocytosis. It would appear that still further work on this problem is required in view of these observations. So far as its use in psychiatry is concerned there is fairly general agreement as to its effects; the change of mood in the direction of elation, removal of inhibition, fatigue, and so forth call for no further mention, but before discussing the psychological effects in greater detail the present results will be considered.

The Present Investigation

The patients have been grouped in three categories: (1) those showing no change mentally or physically after taking benzedrine (Table A); (2) those who appeared to benefit by it, including those cases in which the beneficial psychological effect outweighed any unpleasant physical sensations which may have occurred (Table B); and (3) those in whom it was necessary or desirable to discontinue the drug because of untoward effects or because it proved of no value (Table C). In an earlier paper I described with Dr. Scott some unfavourable cardiovascular complications, the most notable of which was a transient heart-block. These experiences made us for a time exceedingly cautious in dosage; but we now believe this case to have been exceptional, and in view of increased experience with benzedrine, together with the fact that others—for example, Prinzmetal and Bloomberg (1935)—have now given the drug continuously for long periods, in some of their cases for over a year, without mishap, we have not hesitated to give larger doses. Nevertheless I consider there is still need for caution in its administration and more detailed investigation of its cardiological effects in particular. I agree with Davidoff and Reifenstein (1937) that it is best given under supervision in a hospital. So far, despite the comparatively large amount of work which has been done, the drug is still in the experimental stage.

TABLE A

No.	Sex and Age	Diagnosis	Maximum Dose	Duration	Unfavourable Physical Symptoms	Psychological Symptoms
1	M., aged 49	Recurrent depression (third) with paranoid features and much retardation	30 mg.	One month	None	No change. During period of severe retardation, no change
2	F., aged 34	Schizophrenia (catatonic stupor)	20 mg.	One occasion	None	No change
3	M., aged 44	Depression with hypochondriasis	10 mg.	One day	No change	No change
4	M., aged 49	Depression (agitated, self-accusatory)	20 mg.	Two days	No change	No change
5	F., aged 56	Depression (retarded)	20 mg.	One day	No effect	No effect

Of the total number of patients to whom the drug was given, in fifteen, or just under one-half, it was found necessary or desirable to discontinue the drug. In two others the drug appeared to be of no value and was discontinued essentially for this reason. Some undesirable symptoms also occurred in these patients, but they were not severe enough in themselves to have justified discontinuance of the drug had there been a concomitant psychological effect of any value. One patient, a man (C 10), was the "organic case" mentioned above; the other, a woman, was a case of anxiety state (C 11) with numerous phobias, who had been depressed for a day or two and for whom it was thought the drug might have a beneficial effect in tiding her over this crisis. In eleven

TABLE B

No.	Sex and Age	Diagnosis	Maximum Dose	Duration	Unfavourable Physical Symptoms	Psychological Symptoms	Remarks
1	F., aged 27	Depression with obsessional and hysterical features	30 mg. Usual dose 20 mg.	Twice or thrice weekly for one year	Felt shaky. Tingling sensation over head and body. Tachycardia. Tingling sensation later got worse and she felt her "heart nearly choked" her. Anorexia. Pains over legs. Strangled feeling and palpitation	Felt "lively"—not a normal feeling," a quiet feeling." Feeling of lightness and buoyancy. Sense of remoteness. Time seemed to pass more quickly. Feeling of confidence and loss of self-consciousness (in popular sense). After smaller doses marked decrease in depersonalization; with larger doses feels drawing into self, more absorbed and inactive	On the whole a beneficial effect
2	M., aged 46	Depression with obsessional features. (Phases of severe agitation)	30 mg.	Twice	Shakiness in legs. Dry mouth. Feeling of "film on tongue" noticed two hours after ingestion of drug. Later tongue felt dried up	"More composed." Treading on air. "Light-headed." Alteration of time experience—*e.g.*, felt he "was living in the present." Felt for first time his illness was really illness. After 30 mg. felt as if he had had alcohol but with difference that head was clear. Later felt drowsy, but on questioning this was shown to be more a feeling of "absolute control." Obsessional preoccupation over bladder and bowels diminished. Increased talkativeness. Likes and dislikes for people intensified	Definitely beneficial effect. Discharged a week or two later much improved. Drug given when clinical improvement had already begun
3	M., aged 33	Schizophrenia. (Earlier acute attack with hallucinosis and paranoid features—now disappeared)	20 mg.	Regular for one month	None	More "toned up physically." Drowsy. More energy	Dubious value. No effect on psychotic symptoms which could be attributed to drug
4	M., aged 50	Involutional depression with prominent hypochondriasis	45 mg.	Sixty-two days	Severe pain in occipital region (probably of same nature as similar sensation associated with illness). Tachycardia and consciousness of heart's action, which he interpreted as a good sign as against former unawareness, which he felt indicated trouble with heart	Queer feelings in scalp modified favourably by drug. More cheerful. Feeling it was unnatural—"not himself." After 10 and 25 mg. very elated and talkative	Effect variable. After twenty-two days thought effect of drug wearing off. Broadly, a beneficial effect, and with its help might possibly begin work again, which without drug would probably be impossible
5	F., aged 41	Depressive psychopath with periodic severer depression, with suicidal ideas; heavy spirit drinker, taken to overcome inhibition	30 mg.	Frequent occasions over period of two months	Heavy feeling in epigastrium. Consciousness of heart's action	Felt more relaxed, less depressed. More inclined to talk to people. Less energy than with alcohol. Did not regard drug as so effective. Felt drug enabled her to go through day more easily. Towards end of treatment with drug felt more depressed than usual when effect passed off—? usual constitutional intensification of mood; this seemed more probable	On the whole the drug had beneficial effect
6	M., aged 49	Depression with hypochondriasis (first attack)	10 mg.	Three isolated occasions, then continuously some months later for twelve days	Intensified feeling of pressure in head when drug (first course) given. When second course given some months later this symptom was not made worse	Talked more; more assurance. "Spirits risen 100 per cent." Felt a little drunk. Depression intensified five hours after one dose	On the whole had a beneficial effect
7	M., aged 28	Recurrent depression with prominent anxiety, with phobias, etc.	10 mg.	Three occasions	Palpitation and sweating. Tremulousness	Felt drowsy and "heavy-headed." Alteration of time perception in direction of normal—*i.e.*, recently past events seemed more vivid	Doubtful whether beneficial effect
8	M., aged 51	Recurrent depression with obsessional features	30 mg.	Five weeks (thirty-five days)	None	"Absolutely right as rain, one might say too right; all my troubles fell away." After five days on 15 mg. thought drug losing effect. Dose increased to 30 mg., and this has been steadily effective since	Action variable in psychic sphere but almost entirely favourable effect. Duration of period between dose and psychic effect—varied
9	M., aged 49	Depressive (first attack) with obsessional colouring—*e.g.*, inability to make decisions	10 mg.	On isolated occasions during one month	None	More cheerful. Not so tense. More talkative, confident, and hopeful. Felt he could deal with his problems better	Administration of drug coincided with definite and progressive clinical improvement
10	M., aged 49	Recurrent depression (second), self-reproach, feeling of inadequacy	20 mg.	Two occasions	Slight headaches and giddiness	Drowsiness and heaviness. Seemed "clearer in the eyes." More confident and self-reliant	Given during period of clinical improvement, and soon after discharged much improved
11	M., aged 49	Recurrent depression (second). Emotional instability, inability to concentrate. ? early organic. (Suffered from asthma)	30 mg.	Isolated occasions at first. Regularly for fortnight, also after discharge	Felt "wobbly." Asthmatic symptoms improved and breathing easier. Some blurring of vision. Limbs ached. Slight headache	Felt a little "dopy." Rather more cheerful. After 30 mg. feeling of exhilaration. More talkative. Feared addiction. Alteration of time perception (time seemed to go faster). Concentration improved	Beneficial effect after discharge (20 mg. per day). Effect of same dosage varied

TABLE C

No.	Sex and Age	Diagnosis	Maximum Dose	Duration	Unfavourable Physical Symptoms	Psychological Symptoms	Remarks
1	M., aged 51	Chronic depression with depersonalization	20 mg.	Three times	Slight headaches and dizziness. Anorexia	Head slightly clearer. Felt more tired and was unable to concentrate so well	
2	M., aged 35	Depressive with hysterical features	10 mg.	Four occasions	Dizziness. Legs felt heavy	Dazed. More depressed	
3	F., aged 29	"Anxiety state" (palpitation, acid dyspepsia, some phobias, etc.)	10 mg.	One occasion	Dizziness. Later palpitation, headache, and nausea. Increased lability of blood pressure and some extrasystoles	No change in mood	
4	F., aged 35	Mild manic-depressive	20 mg.	On isolated occasions during one month	Severe headache. Pain from chest upwards and including all face. Intermittent spells of giddiness (? entirely due to drug, as she had reported this before). They ceased immediately after drug to reappear at intervals	Less tense. Body felt more comfortable. "Mind worked very actively," and poor sleep	Dubious value, so discontinued
5	M., aged 29	Depression with self-reproach. Feeling of inferiority, etc.	10 mg.	One occasion	Headache. Tremulousness	Felt "frantic." More self-reproachful two and a half hours later; felt calmer; then one and a half hours later still "shaky" and complained of headache. Some diarrhoea	No beneficial effect
6	M., aged 35	Depressive psychopath, obsessional and paranoid features	10 mg.	Several isolated occasions	Head-throbbing. Giddiness	"Made head a bit more clear. I think I feel more, gives me a little more brightness." More self-confidence. After two or three doses asked that it should not be given him again as it made him feel unnatural and excited	Left hospital as he refused to continue treatment with drug
7	M., aged 29	Recurrent depression with obsessional features	30 mg. daily	Twenty-two days	Complained of heavy sensation in epigastrium. Marked fall in weight (physical examination revealed no reason). Anorexia more marked	Indecision less after drug. Felt he could concentrate better; more energy. Brain more active. Pleasant thoughts. Days passed more quickly than before. Towards the end of period effect seemed to wear off and symptoms became relatively more prominent, for which patient blamed the drug. Fatigue	Discontinued chiefly owing to loss of weight, which it was felt might be due to the drug
8	M., aged 49	Involutional depression with paranoid features	30 mg.	One occasion	Transient heart-block	Calmer. Lived more in the present. Did not think so much about his trouble	Reported in earlier article
9	F., aged 47	Depression with hysterical features	20 mg.	One occasion	Tachycardia. Vision blurred and felt shaky. Numb feeling down the arms	Felt brighter	
10	M., aged 46	Manic-depressive with disseminated sclerosis	40 mg.	Continued for one month	Feeling of constriction in neck. Unsteadiness of gait. Dizziness and nausea	No change in mood. Felt if anything a bit more lethargic and unreal	
11	F., aged 46	Anxiety state, phobias, etc.	15 mg.	Four times	Skin dry and hot. Hot and tight in head	"Brain worked all night and raced from topic to topic." No change in mood	Given during a brief period of depression lasting two days or so
12	F., aged 52	Involutional depression with hysterical features	20 mg.	One occasion	Severe sympathetic reaction. Faint. Nearly collapsed. Extrasystoles	No change	Case reported in earlier article
13	M., aged 29	Manic-depressive with depersonalization	20 mg.	Two days		Dazed, unsteady, and headache	Increased activity
14	F., aged 56	Manic-depressive. Hypochondriasis. Pain in head and face	20 mg.	Two days		Giddy and "drunk"	No effect
15	F., aged 38	Manic-depressive. Hypochondriasis	20 mg.	Four days	Palpitation and nausea	Talked with greater ease	
16	M., aged 24	Schizophrenia. Depressed, tense, hypochondriacal	20 mg.	One day	Pain in chest	No change except exaggeration of hypochondriasis	
17	F., aged 24	Depression (retarded)	20 mg.	Two days	"Dazed"	Some days later said inner excitement had been present	

of the patients (one-third) a beneficial effect could be claimed, in some cases with reservations. In two of them the benefit was somewhat dubious; one (B 7) was a man of 28 with mild depression and depersonalization with some phobias and anxiety features, palpitation, sweating, and tremulousness, which were increased, as might have been expected. This is in accord with Guttmann and Sargant's (1937) observations of the effect of the drug in anxiety conditions. The other (B 3) was a schizophrenic in whom there was a slight clinical improvement which seemed doubtfully due to the drug. Nevertheless he thought it "toned him up."

Physical Symptoms

Of the eleven patients who appeared to benefit from the drug only three had no physical symptoms—that is, the drug appeared to exert its effect in the psychic sphere alone. Of these three, one had 30 mg. daily for a month

TABLE D.—*Normal Controls*

No.	Sex and Age	Maximum Dose	Duration	Unfavourable Physical Symptoms	Psychological Symptoms
1	M., aged 35	20 mg.	Once	Palpitation. Pains in left chest and in left axilla. Shakiness in walking. Sweating increased. Absence of fatigue	Thinking quicker and easier. Arguments easier to marshal. Less reserve. Feeling of well-being. Time seemed to pass more quickly. Sceptical attitude towards value of therapy in some cases less marked. Feeling of being completely master of every situation. Self-depreciation reduced, but no tendency to overvaluation. Feeling of not being quite natural. Feeling of tension three-quarters of an hour after taking drug
2	F., aged 46	20 mg.	Once	Felt changes in sensation in finger tips and muscles of jaw. Giddiness. Tendency to walk to left. Difficult to keep a straight line. Blurring of vision. Got tired of holding teacup; it was an effort to eat	Slightly apprehensive. More alert. A little happier than usual
3	F., aged 35	20 mg.	Once	Some "swimminess" on lying down. Tingling sensation in legs. Breathlessness and dizziness. Anorexia: tiredness later: some dimness of vision, momentary: some abdominal discomfort. Dry mouth. Decreased micturition	Elation. Increased output of talk. Increase of energy mental and physical
4	M., aged 46	20 mg.	One day	Fullness in head. Nausea. Tiredness. Feeling of nausea day after test. Increased frequency of micturition	"Full of beans." More confident, alert, talkative, and energetic. Time passing more quickly. Less reserve
5	M., aged 34	20 mg.	Three days	Pain in chest	Increased activity
6	M., aged 35	20 mg.	One day	Pain in chest	Increased activity, cheerfulness, and increased talkativeness
7	F., aged 23	20 mg.	Twice	None	None
8	F., aged 19	30 mg.	One month	Some anorexia	None

the second 10 mg. on isolated occasions during a similar period, and the third, the schizophrenic already mentioned, 10 mg. daily for a month. In the other eight it was considered that the favourable central effect outweighed any physical phenomena which may have appeared, though these in several cases were quite unpleasant. In five cases no mental or physical change was noted. Two of these (A 1 and 5) were depressives with much retardation. Here the result was in accordance with what Guttmann and Sargant have found in this type of case. Another was a case of catatonic stupor (A 2). All the controls except one had physical sensations, some of them unpleasant.

The principal symptoms were headaches, giddiness, and cardiovascular symptoms—for example, tachycardia, pains in chest, extrasystoles, and the case of heart-block already reported elsewhere. Two patients complained of a heavy feeling in the epigastrium, possibly due to an increase in gastric acidity. Four complained of blurred vision, including two of the normals; five complained of anorexia, including three normals—one of the patients (C 7) showing this symptom had complained of anorexia before, but it became definitely worse while the drug was given. This patient was also the only one of the series to show a notable loss of weight (over a stone), which might have been secondary to the anorexia but may also have been an effect of the drug. Davidoff and Reifenstein found a loss of weight in most of their subjects. Physical examination in this case failed to reveal any cause for it. These results are all the more noteworthy when the relatively small dosage used in most cases is taken into account. One normal subject (D 4) had decreased frequency of micturition; the other (D 5), also normal, increased frequency. One patient (B 2) complained of a sensation he described as "a film on his tongue." One patient reported diarrhoea (C 5).

Psychical Effects

So far as the effect of the drug on different psychiatric conditions goes, the best results were obtained with the depressives. It seems impossible to predict what patients will benefit by the drug. It seems as if the drug were perhaps of greatest value in the terminal stages of a depression—that is, when clinical improvement has already appeared. This was true of several of our cases, and is again in agreement with what Sargant and Guttmann had found. These authors are diffident of giving the drug to patients with prominent hypochondriasis, but in some of the patients of this series the hypochondriacal symptoms were beneficially modified, however temporarily, and it seemed in one case the only form of therapy known likely to prove of much value. It enabled this patient (B 4) to face a medical board and perhaps even to launch him again on his duties. In another case (B 5), a depressive psychopath who had been accustomed to take large quantities of alcohol to overcome her inhibition and enable her to do her work, it was hoped to replace alcohol by benzedrine. This was unsuccessful. In this context it may be mentioned that Wilbur, MacLean, and Allen (1937) found it gave marked relief to the craving in chronic alcoholics, acting as a supplementary stimulant over a period of months. A subjective alteration of time experience was noted in a number of cases (Table B). One or two of the patients complained that the drug made them feel "unnatural," and one of these (C 6) implored me to give him no more of the drug although he admitted the beneficial psychic effect. He finally left the hospital in order to escape the treatment. One or two others, although admitting benefit, were unwilling or reluctant to have any more—an odd and probably unique situation in therapeutics. Others again—as might be expected, depressives—while admitting benefit, pointed out that it was after all a drug and they did not wish to be dependent on this, an attitude precisely similar to that adopted by many such patients towards the necessary sedatives to procure sleep.

With regard to sleep, the results were very variable. Several on the larger doses, 30 to 40 mg. a day, slept well, even when the drug was given at midday. Moreover the sleeplessness, when it occurred, was usually not a painful or unpleasant experience. In general the effect observed on sleep was similar to that found by other workers, and needs no further comment. Four patients felt drowsy or "dopy" after the drug and two felt fatigued. In one

or two cases there was an increase in the depression when the effect of the drug was wearing off, and it is important to bear in mind that Davidoff and Reifenstein mention a case of manic-depressive illness in which the patient impulsively attempted suicide. One of our patients (the alcoholic depressive) became very much more depressed, and the question of suicide was uppermost in our minds for some days, and in another (C 5) the depression was considerably intensified. This might, of course, just as well have been a usual constitutional intensification in the first case, but it appeared to be a definite effect of the drug in the second.

Comment

It must be admitted that, so far at least as these results are concerned, it is difficult to claim any great therapeutic value from benzedrine. Nevertheless, if its use relieves the depressed patient even transiently and gives him a few hours' respite, the drug has a place in psychiatry. To claim more than this from it at the moment, however, is impossible, and there are many limitations to its usefulness, not the least of which is the variability of its action. A small minority of cases seem to benefit definitely from benzedrine, and its greatest usefulness perhaps is in those cases of depression in which a clinical improvement has already set in. Here it may be helpful in giving the patient a temporarily increased insight, which has been of use psychotherapeutically. Apart from this, the drug is of doubtful value as an aid to psychotherapy. It was difficult to resist the impression in one or two cases that the speed of convalescence from a depression was increased, but this is difficult, if not impossible, to establish objectively. Indeed it is almost impossible in many cases to separate the changes of the normal process of recovery from the effect of the drug, which makes any pronouncement of its value in such cases very dubious. For those patients who have clinically improved but who for economic or other reasons are unable to stay in hospital and must return to work, benzedrine is sometimes of help in enabling them to face their day's work. The drug should, however, be controlled by frequent examination of the patient afterwards. For those depressed patients who may at any time get worse, and perhaps contemplate suicide, suitable doses of benzedrine may enable one to keep them in a hospital or even in everyday life without extra supervision. Here, again, they should not be given a bottle of tablets and allowed to go their way.

With regard to dosage, 10 to 40 mg. in ordinary cases should be enough, and a divided dosage—say, 15 mg. at 9 a.m. and a further 15 mg. at 11.30 a.m.—is to be recommended; and certainly, unless the patient is under full in-patient supervision, this dosage should never be exceeded. The drug is admittedly still in its experimental stage, but enough work has now been done to make it doubtful how far, if at all, it is likely to be of greater value in psychiatry than it is at present. The contra-indications are now being established, but from my experience it would appear to be unwise to give benzedrine to any subject with cardiovascular disease in any form, or to those with prominent anxiety symptoms. The initial dose should not exceed 10 mg. and the optimum dose should be determined carefully. I agree with Davidoff and Reifenstein that it should be used cautiously in certain depressives because of the possibility of intensifying the depression, with consequent suicidal risk. This risk has not been sufficiently stressed.

Summary

Thirty-three patients suffering from different forms of mental disorder and eight normal subjects were given benzedrine orally in doses of from 5 to 45 mg. In sixteen the drug had to be discontinued because of untoward effects, mental or physical, and in two more because no beneficial effect was produced. In eleven (one-third) the drug appeared to be helpful. In five no effect, mental or physical, was produced. Dosage, contraindications, and the general value of benzedrine in psychiatry are discussed.

I should like to thank my colleague Dr. W. C. M. Scott for having furnished me with his observations on several patients in this series and some of the controls, and also for much valuable help in the preparation of this paper.

I would like also to thank Messrs. Menley and James, the distributors, for supplying me with a generous supply of the drug with which to carry on this work.

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The following medical promotions in and appointments to the Venerable Order of the Hospital of St. John of Jerusalem are announced in the *London Gazette* of June 24. As Knights: Major A. W. Anderson, M.B., Major W. O. Evans, M.B.E., L.R.C.S.; as Commanders: D. W. A. Bull, M.D., C. Armstrong, M.B.; as Officers: L. L. Westrope, M.D., H. Riddell, M.B., E. H. Knowles, L.R.C.P. and S.Ed., H. Banks, F.R.C.S., A. P. Martin, M.B., J. Vaillancourt, M.D., Lieutenant-Colonel F. A. Young, M.D., Major-General P. S. Mills, C.I.E., W. T. Thomson, M.R.C.S., C. A. Verco, M.B., W. G. Shellshear, M.B., Colonel J. L. Hamilton, M.C., T.D., M.D., K. S. Maurice-Smith, M.R.C.S., Lieutenant-Colonel C. L. Dunn, C.I.E., J. K. Milligan, M.R.C.S., A. T. McKay, M.D., E. Lewys-Lloyd, M.R.C.S., Hon. P. P. Debono, M.D., F.R.C.S., Professor J. Ellul, M.D., E. L. D. Parry, M.B.; as Associate Officers: Colonel D. H. Rai, M.C.; as Serving Brothers: F. M. Longson, M.B., E. Ringrose, M.D., J. R. Hall, M.B., G. Fisk, M.D. (since deceased), G. H. Edgecombe, M.B., L. A. Williams, M.D., W. O. F. Sinclair, M.B., J. E. Scales, M.R.C.S., J. C. P. Bayley, L.M.S.S.A., J. B. McKay, M.B., F. C. Cozens, M.B., W. W. A. Kelly, M.B., A. J. Craig, M.D., T. D. Delprat, M.B., A. F. Janes, M.B., H. C. E. Donovan, M.B., J. McK. Woods, M.B., C. S. Renwick, M.B., F. L. Firkin, M.B., P. D. Braddon, F.R.C.S.; as Serving Sister: Frances C. B. McKay, M.B.

THE USE OF PLACENTAL EXTRACT IN AN EPIDEMIC OF MEASLES

BY

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This is an account of an epidemic of measles in a girls' school in which placental extract was used as a prophylactic.

The girls vary in age from 13 to 17 years. There had been no such epidemic in the school for nine years, and at the beginning of the Easter term, 1938, of the 205 girls under my care eighty-nine had not had measles. On January 18, a few hours after the return to school, one child was found to be in the incubation stage of measles. She came by the school train and school bus, so that contacts were widely spread throughout the school. Prophylactic measures were discussed, and in view of the difficulty of obtaining convalescent serum, it was decided to use placental extract in an attempt to modify the subsequent attacks and to lower the complication rate. Moeller (1937) maintains that this extract is as efficacious as convalescent serum and of greater prophylactic value than adult serum. Parents were circularized, and forty-seven asked that their children should be given the injection, some of them requesting that this should be done at once. When the time of injection was left to our discretion the injection was given as soon as a case occurred in either the girl's house or form. All were given between January 27 and February 16. The term ended on April 3.

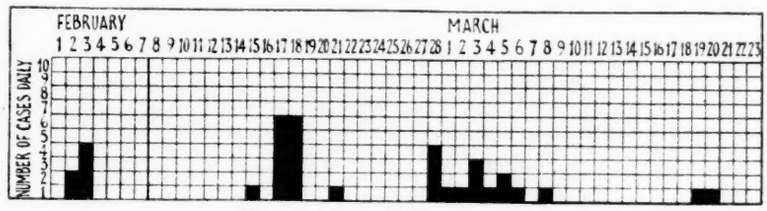

FIG. 1.—Unmodified cases (36).

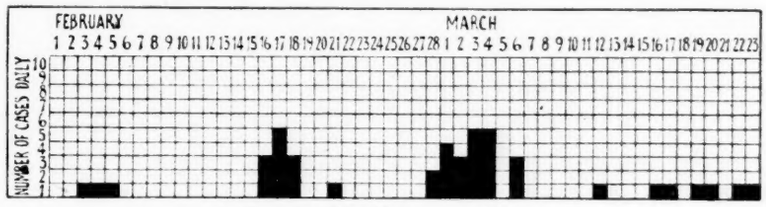

FIG. 2.—Modified cases (44).

Dose and Reactions

The extract used was Lederle's immune globulin, and it was given in one intramuscular injection of 4 c.cm. into the buttock. There were no immediate reactions, but after a few hours stiffness and some pain at the site of injection were usual. The stiffness persisted for about two days. One child had a temperature for twelve hours, but in no case was there constitutional disturbance of any severity, nor did any delayed reactions occur.

Course of the Epidemic

The case incidence throughout the term, after the initial infecting case (which is not included in these statistics), is given in Figs. 1 and 2. Fig. 1 shows the day of onset of rash in the unmodified cases and Fig. 2 the day of onset in the modified cases.

Taking into consideration the larger number of cases in which the prophylactic injection had been given, it does not appear that the extract had any effect in delaying the onset of the attack.

By the end of the term seventy-five of the eighty-nine susceptibles had developed measles, as well as five of the 116 said to have had measles previously, of whom two had also received a prophylactic injection. The distribution of cases in the modified and unmodified groups is shown in Table I.

TABLE I.—*Incidence of Measles*

	Previous Measles (116 Cases)		Susceptible (89 Cases)	
	Modified (2 Cases)	Unmodified (114 Cases)	Modified (45 Cases)	Unmodified (44 Cases)
Measles developed . .	2	3	42	33
No measles	0	111	3	11

It is obvious that the extract had no effect whatsoever in preventing the attack of measles. On the contrary, the above figures show that among the susceptible cases measles developed in 93 per cent. of those who had been given the modifying injection and in only 75 per cent. of those who had not. The two children who had previously had measles, and who had also been injected, both developed measles.

The epidemic was of moderate severity, although there was a most remarkable freedom from serious complications. Temperatures of over 103° were present in 66 per cent. of the total cases. The only complication of any severity was one case of suppurative otitis media.

Effect of Extract on Attack

The effects of the prophylactic injections were much more noticeable in the first half of the term. It is not possible to convey a clinical impression by statistics, but the impression received by all observers was that those cases in which the attack developed within three to four weeks of the injection suffered far less constitutional disturbance. A few of these showed a slight rash of small discrete papules with no tendency to coalesce, but on the whole little difference was observed in the rashes of the "modified" and "unmodified" cases. The most noticeable feature of the recently modified cases was that, although the temperature was high and a well-developed rash was present, the patient remained surprisingly cheerful and undisturbed, and did not present the typical woebegone facies and prostration.

The cases were classified (Table II) as they occurred as mild, moderate, or severe, this classification being based on the degree of constitutional disturbance. This is necessarily a somewhat arbitrary classification, for the degree of disturbance did not appear to have any relation to the temperature or nature of the rash.

The effect of the extract in reducing the severity of the attack is most noticeable in those cases in which it had been given within three weeks of onset of rash.

TABLE II.—*Type of Attack*

	Total Cases	Mild	Moderate	Severe
Unmodified	36	17%	78%	5%
Modified	44	50%	45·5 %	4·5%
Modified within 3 weeks of onset ..	19	74%	26%	—

Table III contrasts the behaviour, during the attack, of the unmodified cases with that of the total modified cases, and with those cases in which the extract was given within three weeks of the onset of the rash.

TABLE III.—*Course of Attack*

	Koplik's Spots	Days under Observation Before Onset of Rash	Days Temperature After Onset of Rash	Temperature over 103°
Unmodified	61%	2.6	3.4	72%
Modified	36%	2.8	2.6	61%
Modified within 3 weeks of onset ..	26%	2.5	2.0	74%

The most noticeable features of this table are the lowering in incidence of Koplik's spots and the quicker fall in temperature after the onset of the rash in modified cases. Both these features are more marked in the recently modified cases. The temperature of the recently modified cases is noticeably high, which is anomalous in comparison with the other results, but may be related to the apparent increase in susceptibility following injection of extract.

Complications

Apart from the one complication of bilateral suppurative otitis media, there were no serious complications. The complications given in Table IV are chiefly accounted for by the persistence of what may be regarded as normal concomitants of measles. Apart from the one case of suppurative otitis media in which paracentesis was performed, all cases of otitis were of the catarrhal type.

TABLE IV.—*Complications*

	Total Cases	No. Complicated Cases per Cent.	Acute Conjunctivitis	Styes	Persistent Nasal Catarrh	Sinusitis	Laryngitis	Persistent Bronchitis	Otitis Media	Total Complications per Cent.
Unmodified	36	61	8	2	3	1	—	8	5	75
Modified	44	25	1	1	2	1	2	3	5	34
Modified within 3 weeks ..	19	5	—	—	—	—	—	—	1	5

There is a remarkable freedom from complications in the modified cases. The one complication in the recently modified cases was the case of suppurative otitis media, and this occurred in a child who had previously suffered from bilateral otitis media and mastoiditis, and who had received her injection only eight days before the onset of the rash.

Discussion

The great defect in prophylaxis of measles, whether by convalescent or adult serum or by placental extract, is the difficulty in estimating when exposure has been intimate enough to ensure subsequent development of an attack. In a large girls' school there are many opportunities for contact with cases in the incubation stage, but these contacts may be brief and not sufficient to produce an attack.

It was unfortunate that the epidemic started so soon in the term; for it seems probable, from a study of other reports (McKhann, 1937) and from the results obtained during this epidemic, that the passive immunity conferred is of short duration and that immunity decreases rapidly after three weeks.

By mid-term it is probable that most of the immunity conferred by the placental extract had vanished. Fortunately it does not appear that the extract in the doses given prevented or delayed the development of measles. Crosbie (1938) found that 4 c.cm. of placental extract was not always sufficient to ensure a modified attack, although it did prevent complications and sequelae. It is probable that if a dose larger than 4 c.cm. had been given in this epidemic the immediate modifying effect would have been more pronounced, but there would then have been a greater risk of postponing the peak of the epidemic until later in the term, by which time the modifying power would have been greatly diminished. In a school epidemic it seems wiser to recommend for "modification" a dose which may in some instances fail to modify, although preventing complications, for such a dose will be less likely to bring about complete prevention.

There was a remarkable freedom from serious complications in the epidemic, and this renders the estimation of the value of the extract in reducing the complication rate less conclusive. If, however, by the use of the extract, the reduction obtained in the number of somewhat trivial complications may be taken as an indication of its power in preventing major complications in some less fortunate epidemic, then the value of the extract is undoubted.

Apart from deliberate exposure of susceptible cases with a coincident modifying injection, the ideal course to adopt in an epidemic would be to immunize susceptible cases at intervals of three weeks until an attack developed. This would involve considerable inconvenience and expense, and in an epidemic of the type described, in which serious complications were absent from the start, it does not seem justifiable to advise this procedure.

Summary

An epidemic of measles in a girls' school is described in which placental extract was used in an endeavour to reduce the severity of the attack and the subsequent complications. There were no serious reactions following the injections. The extract did not have the effect of preventing or postponing the attack: it rendered the attack milder, the duration of temperature shorter, and lessened the subsequent complications. It is probable that the immunity conferred diminishes fairly rapidly after three weeks.

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The next annual meeting of the Society of German Neurologists and Psychiatrists will be held at Cologne from September 25 to 27, when the subjects for discussion will be Meinert's, Wernicke's, and Kraepelin's doctrines and their importance in modern psychiatry. Further information can be obtained from Professor Nitsche, Pirna, Bezirk, Dresden.

A WOMAN BLIND FROM BIRTH WHO ACQUIRED SIGHT AT 22 YEARS OF AGE

BY

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Very few cases have been reported of a person who, blind from birth, has obtained sight in adult life. I have been able to find records of only four cases, although I have no doubt more may have been published.

I saw this girl for the first time on March 8, 1932. She had been blind from birth as a result of congenital cataract, and had been educated at a blind school from 10 to 19 years of age. No operation on the eyes had been performed.

Condition of Eyes before Operation

On March 8, 1932, she could distinguish light from darkness with each eye, and could tell when an object was moved in front of her face, especially if a bright light was behind the object. The projection of light of both eyes was good. They exhibited marked nystagmoid movements, best described as "shuddering." There was convergent strabismus, possibly the right eye being the one more usually turned in. Both lenses were completely opaque. Slight epiphora was present, the lacrimal sacs having been removed during childhood. There was no history of blindness in the family, and she was the only blind member out of seven children.

Condition when Blind

Before the operations she was a totally blind person earning her living as such. She was unable to get about without assistance, and had to be led when not in her own home, except for the fact that she used occasionally to visit a friend's house and a shop about two minutes' distance, to reach which it was not necessary for her to cross a street. She had never seen a human face, a flower, a motor car, or anything which a sighted person takes for granted. All her ideas about the world had been obtained from reading braille, from information given to her by others, and by the use of her other senses. She had scarcely any preconceived ideas of things which she could not feel. When reading in braille she took no interest in the description of things or places, but only what people said and did.

The other senses were well developed. She had very acute hearing—better than the other members of her family. Similarly, her senses of smell and touch were very good. She says she was unable to detect the presence of a person in a room if he kept absolutely still, but could recognize members of her family by their cough, the way they walked, etc.

While at the blind school she had learnt braille, which she can read fluently. She had been taught machine knitting and chair-seating as well as the ordinary school subjects—English, history, geography, music, and arithmetic up to fractions and decimals, etc. She was very happy while at the blind school, as, being with blind people, she did not realize any disability, but on returning home she felt her position in comparison with those with sight. After leaving the school she worked at home at knitting and chair-seating. She came to consult me in the hope that something could be done for her.

Operative Measures

Both lenses were needled several times, and a curette evacuation was performed on the right. Later the capsules were needled.

CONDITION ON DECEMBER 8, 1937

Right eye: Vision with + 15 D sph. and + 1 D cyl. axis 60° = 3/60; add + 4 D sph., reads J 12 with difficulty. Left eye: Vision with + 16 D sph. and + 1 D cyl. axis 135° = 6/60; and + 4 D sph., reads J 8. Both mediae are clear and the fundi appear normal. Horizontal nystagmus is present in both eyes, but far less marked than before the operation. The axis of the eyes is usually parallel; but occasionally one eye, usually the right, is turned in.

On account of the type of the operations performed her vision returned only very slowly—from appreciation of light through blurred vision eventually to seeing things reasonably well with the aid of glasses. Having built up a world of her own it is very difficult to appreciate her thoughts on being presented with the sight of the ordinary things of life.

Psychological Observations after Operations

PERCEPTION

On gradually obtaining her sight the first thing she noticed was a white apron worn by a nurse, then the red colour of a dress. Next she saw a window and a doorway. The window had no shape, but appeared as a bright area, and the sky white. Later she saw her hands and fingers, but could not distinguish her nails. After this she saw chairs and tables. Then she saw a face. The second colour she noticed was green, and the other colours later. She had to be told the name of each colour. Even now she has difficulty with some of the different shades.

When she first saw a building it appeared a dark object with no shape. After she got her glasses buildings looked huge, but she had no preconceived idea of their shape or the appearance of the different types. She did not recognize a church, although she knew that it had a tower or steeple, but this did not convey anything to her. She had read descriptions of different things, but did not appreciate what they were going to look like.

At first she had no estimation at all of distance, and could not judge the position of objects in relation to herself. Cars seemed to be coming straight at her, and people appeared to be walking into her. She still occasionally thinks a car is coming straight at her; but she can cross roads, and is usually able to tell how far away a car is and whether it is safe to cross. In going upstairs she could not judge the height of steps, and sometimes raised her foot too high. She fell both when going upstairs and when coming down. Even now if stone steps are wet she has some difficulty. When blind she did not bump into a door, but when she first relied on her sight she did so—similarly with tables and chairs. She could see the doorway, but had no idea of its relation to herself: she could not tell how far away it was. Now, however, she has no difficulty in avoiding objects.

At first she had no appreciation of solid objects, probably the outline only being seen. She had no perception of form. She thinks that at first she could not have told a brick from a ball except by touch, but is able to do so now; and she can also appreciate depth and can distinguish a solid object from a flat one. Also, in the blind state she had no knowledge of the relative size of different

things, and on seeing objects such as houses for the first time they looked enormous. She thought some animals were much larger than she found them to be when she went to the Zoo. She had imagined that bears were as large as elephants, and the latter much larger still. Cats and dogs did not appear larger than she expected, probably because she had touched them when blind. She knew that dogs were of different sizes. Looking at a cat and a dog of the same size she could not distinguish one from the other unless the dog barked, but she could do so quite easily by touch. Objects which she could feel she was able to recognize, and thus learn to know by sight.

She is intelligent and has a good memory. She has asked many questions, and on being told what things were she has remembered. Looking out of the window at the Bath Eye Infirmary she saw an object going up the road outside. She knew it was some kind of motor vehicle as she had previously seen cars, but this was different. On describing it to another patient she was told that it was a motor van. Similarly with all the objects she saw—she had to learn what they were.

Faces at first looked alike, but she is now able to distinguish one from another. She was greatly disappointed with faces, as she said she had thought all people were beautiful and had "happy-looking faces." In looking at a print or photograph she has difficulty in telling the foreground from the background. Coloured pictures at first appeared just a mass of colour, but now she is able to a large extent to make out the subject of the picture. She likes bright things, and thinks flowers are beautiful.

She is a fluent braille reader, but of course did not recognize the ordinary printed word or figures, and had to learn the ordinary alphabet and figures before she could read the printed and written word.

As she did not understand what she was looking at she made progress by: (1) asking questions; (2) recognizing things by touch and then by sight; (3) recognizing things by smell and touch—for example, the different flowers, where of course colour helped; (4) recognizing things by knowing what she had read or been told.

VISUALIZING, ASSOCIATION, ETC.

She had no visual images until she obtained her glasses. The association of ideas in a person who has never seen are by sound—including sound of words—touch, and smell. Thought in the blind state is mainly word-thinking, but in the sighted it is mainly picture-thinking. Her association of ideas is now that of a sighted person—that is, dependent on visual images. She is able to describe objects which she has seen earlier.

At first she was very depressed and wept a lot—in fact, she must have gone through a great emotional strain. Probably she had not realized that she would have to learn all about visible objects, and more or less start again at the beginning. She was, so to speak, between two worlds. Eventually, as time went on, she gained confidence as her vision improved and her sighted knowledge increased.

On March 30, 1936, she obtained a post at a factory, starting at 10s. a week. After three months her wage was raised to 12s., at six months to 14s., and at a year to 16s. Now she is earning 19s. a week. Normally a girl leaving school starts at the age of 14 years at 10s. a week, rising to 18s. at 16.

Before the operations she had to be brought from her home to see me in Bath, but now she can find the way by herself, travelling by bus and walking to the Eye Infirmary. She has joined the local company of rangers, and does the ordinary field work and plays games, but has difficulty in catching a ball. She can do general housework, dusting, polishing floors, and making beds; and when washing up does not break more things than a sighted person. She has not yet done any cooking. She goes to the cinema, and on her holidays enjoys sea-bathing. She watches her friends playing tennis, but cannot play herself as she cannot hit a ball with a racket. Although she can write well and read the printed word, she still finds it quicker to read braille. She has also visited London—seen Madame Tussaud's, the Zoo, and the theatres, etc.

More detailed psychological studies are being undertaken, and will be published later. There seems no doubt that, at least in the case of a person of the intelligence of the present one, it is possible for a previously blind person to make a fresh start in life as a sighted person, though in some of the cases described this has proved too hard a task.

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MOULDS AND ASTHMA

BY

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In a previous communication (1934) I published a list of allergens which had given rise to positive skin reactions in 522 cases of asthma observed by me in Germany. Of these patients 290 were males and 232 females. The reactions most often obtained were those given by extracts of house dust, bed feathers, and mattress stuffing. The next most-frequent reactions in this series were those obtained from bacteria (108, 20.7 per cent.) and moulds (84, 16.1 per cent.). This latter figure is almost identical with Hansen's figure of 15 per cent. given in his record of asthma cases in Germany.

Storm van Leeuwen was the first to suggest that moulds, especially *Aspergillus fumigatus*, mucor, and penicillium, play a part as "miasms" in (*a*) climatic or (*b*) house allergens. In my own observations the patients were usually tested with aspergillus, penicillium, and mucor extracts, the original cultures being made from the residence of asthmatic patients.

More recently a number of papers have been published in the United States on the problem of moulds as a cause of asthma and hay-fever. Some of these investigations deal with mould extracts as supplied by the Arlington Chemical Company, who made preparations of four types of aspergillus, and one type each of alternaria, chaetomium, monilia, mucor, and penicillium; in all, nine different types. With these extracts Lamson and Rogers (1936), working in Los Angeles, found that of 1,259 patients tested 154 gave positive skin reactions (12.2 per cent.). Of these, sixty-six were positive towards alternaria, twenty-four to chaetomium, twelve to *Aspergillus fumigatus*, and fifty-two to others. On the other hand, Balyeat (1932), who carried out his investigations in Oklahoma, found that only 1 per cent. of 480 patients gave reactions towards moulds. Feinberg (1935), working in Chicago, found that sixty-eight patients out of a total

of 243 (28 per cent.) gave positive reactions towards one or more of several fungi.

Schonwald (1938), on the other hand, reports from Seattle that out of a total of 150 patients 77 per cent. gave positive skin tests to one or the other of ten types of moulds. Reactions were obtained most frequently with *Penicillium expansum* (77 per cent.), *Trichoderma kerningi* (72 per cent.), *Alternaria tenuis* (70 per cent.), and *Aspergillus niger* (68.6 per cent.), and were procured by means of scratches and intradermal reactions. The latter were, of course, comparatively the most frequent.

Brown (1936) tried sixty-eight different types of moulds and yeasts in twenty-four cases. He found that twelve cases were sensitive to saccharomyces and six to alternaria, compared with four who were sensitive towards aspergillus. Prince *et al.* (1937) tested twenty-nine different moulds in eighteen individuals in Texas, obtaining eleven positive reactions, of which he considered eight to be significant. Feinberg (1935) has pointed out that, apart from moulds, yeasts gave positive results in about 11 per cent. of the total number of cases tested. It has also recently been established by Wagner and Rackemann (1937) that old kapok which had been subjected to the action of moulds produced certain allergens to which patients were sensitive when they were not sensitive towards either the kapok itself or the mould alone. This indicates that not only are the moulds themselves a source of allergic reactions, but that these are produced, in addition, by some products of the action of moulds on other materials.

The great variation in the frequency of mould reactions in allergic patients apparent in different parts of the United States is explained by differences in the climate and the resulting frequency of the occurrence of mould spores in the atmosphere. The incidence of air-borne fungus spores varies in different places according to the humidity and other climatic factors. It has been pointed out by Schonwald (1938) that there is a far more abundant growth of moulds in Seattle, with an average morning humidity of 85 per cent. and evening humidity of 51 per cent., than 300 miles inland, where the average humidities are 42 per cent. and 27 per cent. respectively. These facts explain the great part played by moulds in the aetiology of asthma in this district of the United States; this is also proved by the success of desensitization treatment with mould extracts in eighty-six patients.

In hay-fever and in asthma the mould spore is an important factor because of its abundance in the atmosphere, and because, being much smaller than grass pollen, it is more easily inhaled and absorbed. This has been pointed out by Durham (1937), who, working in Chicago, found that there are more alternaria spores in the atmosphere than there are particles of rag-weed pollen. Observations were made in a number of towns during the months of May to November. From a total of over 5,000 observations made by an average number of fifty stations he comes to the conclusion that alternaria spores are an inhalant comparable in importance to ragweed pollen. The view that moulds are of importance is supported by Feinberg, Prince, Lamson, and Underwood, whereas Brown, Credille, van der Veer, and Rackemann have a more conservative view of their importance.

Bernton and Thom (1937) found that cladosporium acts as an allergen, causing asthma or hay-fever in tomato growers. This mould is responsible for the colour of decaying vegetables. It is also mentioned by Guba (1936) as causing the asthma associated with tomato plants. Another cladosporium—*Cladosporium fulvum* Cooke—has previously been mentioned as a cause of asthma by Cobe (1932).

I have examined 185 allergic patients in England, of whom 148 suffered from asthma and twenty-one from hay-fever and rhinitis. The 148 asthma patients were made up of ninety-two males and fifty-six females. Of these males, eighty were tested with moulds, and positive results were obtained in forty-one cases. Of the females, fifty-one were so tested and twenty-eight gave positive results. Of the males, seventy-five were tested with bacteria, forty-six giving positive results. Tests with bacteria were also carried out on forty-five females, twenty-seven positive results being obtained.

Table giving the Incidence of Positive Skin Reactions towards Moulds and Bacteria in England and Germany

	Males		Females		Totals	
	Moulds	Bacteria	Moulds	Bacteria	Moulds	Bacteria
England:						
Tested ..	80	75	51	45	131	120
Positive ..	41 (51%)	46 (61%)	28 (55%)	27 (60%)	69 (53%)	73 (61%)
Germany:						
Tested ..	290	290	232	232	522	522
Positive ..	43 (15%)	54 (18%)	41 (18%)	54 (24%)	84 (16%)	108 (21%)

The table shows that positive skin tests with moulds and bacteria were obtained with comparative frequency in England, the figures with moulds being about the same as those reported by Schonwald from Seattle. On the other hand, the figures observed in Germany, which are similar to the 15 per cent. reported by Hansen for that country, compare with the results reported from the interior of the United States. It is most probable that this is due to the damp climate of England and Seattle, corresponding to their similar geographical situation in the two continents. The relative frequency of positive skin tests with bacteria cultured from asthmatic sputa is also probably due to the fact that infections of the respiratory tract are more common in wet climates than in others.

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The thirteenth Italian Congress for Occupational Diseases will be held at Bari from September 10 to 12 under the presidency of Professor L. Ferrannini, when the following subjects among others will be discussed: occupational pathology of aviation, occupational pathology of athletics, silicosis, adaptability of the Italian workman to the climate of East Africa, and results of the application of compulsory insurance against industrial diseases in the first four years. Further information can be obtained from the secretary, Dr. M. Majo, R. Clinica Medica, Bari.

Clinical Memoranda

Sulphonamides for Meningococcal Meningitis

References to the success of the sulphonamides in the treatment of meningococcal meningitis are still not very numerous. A report of two cases so treated may be of interest.

CASE I

A male child aged 7 months was admitted late on November 24, 1937, unconscious, convulsed, on the fourth day of illness, with a diagnosis of probable pneumococcal meningitis. A bead only of fluid was obtained on lumbar puncture. The child was conscious next day.

A Gram-negative diplococcus giving the sugar reactions of the meningococcus was found. Anti-meningococcal serum was given intrathecally and intramuscularly on November 28, and subsequently: 150 c.cm. in all were given by December 16. On that day the cerebrospinal fluid contained 115 cells per c.mm., the direct film showed pus and meningococci, chlorides were 648 mg. per 100 c.cm., and meningococci grew on culture: the child's temperature was 104° F., pulse 172, respirations 54.

One c.cm. of 5 per cent. soluseptasine (M. and B.) in 4 c.cm. anti-meningococcal serum was given intrathecally and half a tablet of soluseptasine by mouth. During the next forty-eight hours the infant was extremely ill, the temperature rising to 106° F. On December 17 the cerebrospinal fluid contained 60 cells per c.mm. and the film showed Gram-negative diplococci. On December 20 there were 39 cells per c.mm.; a film showed no organisms but culture revealed a Gram-negative bacillus (found to be a contamination from a supply of supposedly sterile water). The temperature fell to under 100° F. on the 19th and did not rise again.

The child was discharged on February 5, 1938, well, but with paresis of right arm and leg, which has since cleared up.

CASE II

A child of 11 months was seen on May 7, 1938, with head retraction and absent abdominal reflexes. I took him into hospital at once by car (mainly because it was a Saturday, and the laboratory closes at noon). A lumbar puncture was done, and 1 c.cm. soluseptasine given mixed with aspirated cerebrospinal fluid, and 4 c.cm. 5 per cent. soluseptasine was also given intramuscularly. The cerebrospinal fluid showed 2,400 cells per c.mm. and meningococci.

The child was transferred to the local isolation hospital on May 8: 5 c.cm. soluseptasine was given that day and half a tablet of soluseptasine by mouth twice a day. On May 9 the cerebrospinal fluid contained 300 cells per c.mm., chlorides were 660 mg. per 100 c.cm., and culture was sterile. Next day 5 c.cm. anti-meningococcal serum was given intrathecally and 5 c.cm. intramuscularly. Soluseptasine was given by mouth until May 14. The cerebrospinal fluid on May 19 contained 15 cells per c.mm.; chlorides were 717 mg., and culture was sterile.

SUMMARY

One severe and one mild case of meningococcal meningitis are reported. Both recovered. The severe case was not apparently helped by serum, but rapidly improved under treatment by sulphonamide.

In the mild case a sterile cerebrospinal fluid was obtained forty-eight hours after sulphonamide was given and prior to any serum treatment.

Curiously enough these are the only two cases of meningococcal meningitis I have seen in twelve years in general practice.

I am indebted to Dr. P. Lazarus-Barlow for the pathological reports.

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A Case of Streptococcal Meningitis

A girl aged 7 was admitted into Loughborough Hospital with definite signs of severe meningitis. She had a history of a discharging right ear for ten days, following an attack of influenza. There was no evidence of mastoid involvement. The ear was dry on admission.

Lumbar puncture performed on the first day produced a cerebrospinal fluid which was under great pressure and cloudy. The report describes it as "a frankly purulent fluid with a predominant polymorphonuclear leucocyte reaction. Cultural examination has yielded a growth of streptococcus." A further report on the same specimen stated that these were haemolytic streptococci. The next day, before the report was received, 10,000 units of meningococcal antitoxin were injected intramuscularly, with the result that the temperature of 104.4° F. dropped to 99° F. eight hours later. On receiving the report 3,000 units of streptococcal antitoxin (scarlatinal type) were given intramuscularly. This was repeated the next day. The temperature was then 101° F. The following day 6,000 units were injected intramuscularly, but the temperature began to swing between 104° and 99° F. We then gave three daily intravenous injections of 9,000 units (30 c.cm.). The temperature fell to normal after the first injection and stayed down for the two days following. The next day 9,000 units were introduced intramuscularly, with the result that the temperature rose to 102° F. Four daily intravenous injections of the scarlatinal antitoxin were then given in decreasing doses of 9,000, 6,000, 6,000, and 4,500 units respectively—a total of 25,500 units (85 c.cm.). Since the first of these four injections the temperature has remained normal.

Lumbar punctures were done daily, and the cerebrospinal fluid only became clear (pathologically) after the first series of intravenous injections of antitoxin. The temperature and pulse are now normal, and the child is behaving normally. There was a slight serum reaction on the eighth day of treatment, in the form of erythematous patches and occasional wheals. The antitoxin injections were given daily, but three minims of adrenaline were injected subcutaneously on the day the rash was first seen, and this disappeared in two days. The ear condition seems to have subsided completely as well. On the first lumbar puncture, done under open ether anaesthesia, paracentesis of the right drum was performed, and apart from a slight discharge, which stopped after four days, the ear has kept dry and there has not been any discomfort from it since. The child has been discharged from hospital and has since been well.

The rapid response to intravenous antitoxin therapy indicates that this form of treatment is worthy of consideration in cases of meningitis following middle-ear infections. The total dosage of scarlatinal antitoxin was 245 c.cm., or 73,500 units, of which 175 c.cm. were given intravenously.

The serum used was Parke, Davis and Co.'s streptococcal antitoxin (scarlatinal type).

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The fifteenth congress of the Association of French-speaking Doctors of North America will be held at Ottawa from September 6 to 8 under the presidency of Dr. J. H. Lapointe. Further information can be obtained from the Secretary, 326, East Boulevard, St. Joseph, Montreal.

Reviews

POST-OPERATIVE RADIOGRAPHY OF THE BILIARY TRACT

L'Exploration Radiologique Post-Opératoire de la Voie Biliaire Principale. By B. Desplas, P. Moulonguet, and P. Malgras. (Pp. 120; 40 figures. 40 fr.) Paris: Masson et Cie.

This volume deals with the radiographic exploration of the biliary passages after operation, and opens up a new field in surgery. The method employed is the injection of either lipiodol or tenebryl into a drainage tube left after operation on the gall-bladder or bile ducts. So impressed have the authors been by the value of the results obtained that it is now part of their routine treatment, carried out a few days after operation. In some cases the operation itself has been of a complete nature with the removal of stones in the bile ducts, when the object of the injection was to ensure that the passage was clear and that no stones had been left behind. In other cases a preliminary drainage has been deliberately performed, and the radiographs serve to indicate what further procedures are required.

The monograph is amply illustrated with actual radiographs of injected cases, the interpretation of which is greatly facilitated by key sketches. They demonstrate the extraordinary ramifications of the bile ducts, the extent of which is really astonishing. They also show the free communication which commonly exists between the bile ducts and the duct of Wirsung, while certain of them show with great beauty the mechanism of the sphincter of Oddi. The subject is so entirely new that we are unable to form an estimate of its possibilities, but we have no doubt at all that it is one which demands the close consideration of every surgeon operating on the biliary passages. The monograph is equally remarkable for its originality and its admirable presentation.

DIFFERENTIAL DIAGNOSIS

Differentialdiagnose in der Inneren Medizin. By Professor Dr. Med. O. Naegeli. Part III. (Pp. 722; 59 illustrations. RM. 10.80.) Leipzig: Georg Thieme. 1937.

The third part, completing the whole of Professor Naegeli's book on differential diagnosis in clinical medicine, has now appeared. The earlier portions of the work were favourably commented on in this *Journal* eighteen months ago, and the present section continues on the high standard already attained. The book has 700 pages of text and 22 pages of well-arranged index. Professor Naegeli, whose recent death we deplore, has everywhere impressed it with his own personality and experience, and it is thus one of the best books available on the subject of differential diagnosis. In dealing with the diagnosis of the febrile state, the author points out how much has been gained by the application of serological and other laboratory methods in differentiating the fevers of hitherto undefined origin. There is no sure diagnosis from the course of the temperature curve itself. Of the simple continued fevers, typhoid is still the most prevalent; the various aspects and complications of typhoid are therefore used to contrast with those diseases which may simulate them, though certain acute febrile diseases with exanthemata have characters of their own. The tropical fevers are included, so that a reference to the book should enable anyone to be aware of the salient points leading to a correct diagnosis. Joint diseases are dealt with under the broad headings of those with fever and those which may be accompanied by fever. A separate section on the differentiation of diseases of the vertebral column is specially useful. The final sections on diseases of the kidney and urinary tract, of the nervous system, and of the organs with internal secretion are equally good.

It is remarkable how much information the author has been able to pack into a small space; the essential features of the normal and abnormal electrocardiogram are given in about ten pages. Throughout the book there is evidence of the critical faculty, the teaching capacity, and the research spirit which brought Naegeli to a respected position on the Continent not only for his work on the blood alone but also in general medicine.

YEARBOOK OF UROLOGY

The 1937 Year Book of Urology. Edited by John H. Cunningham, M.D. (Pp. 472; 120 figures. 2.50 dollars. 10s. 6d.; postage 6d.) Chicago: The Year Book Publishers; London: H. K. Lewis and Co. 1937.

This handy, well-printed, and well-illustrated volume maintains the high standard of its predecessors in offering a succinct and critical compendium of current urological activities. The good result of a bilateral plastic operation for hydronephrosis after ten years makes one wish that more late results of such operations were published. The transatlantic love of scientific accuracy is reflected in such classifications as "pus grade 3; erythrocytes grade 3." But when it comes to "tenderness grade 3" (p. 151) are we to look forward to headache grade 2, constipation grade 4, etc.? The surprising statement that "the administration of chondroitin sulfuric acid is the best-known agent for prevention of stone formation" may reflect the inefficacy of most so-called preventives. It is noteworthy that "most children with vascular obstruction of the ureter are treated for months for chronic pyelitis," and that, in the absence of infection, the renal changes are regularly interpreted as interstitial nephritis, although a correct diagnosis can usually be made by complete urological examination. Criticism is rightly expressed of those gynaecologists who say, "If one does not know what to do, then cut the presacral nerve." Pyelitis, hydronephrosis, and male sterility are mentioned as observed sequelae. The confession of 110 perurethral resections with sixteen deaths at a reputable clinic is a refreshing change from the monotonous and largely incredible reports of hundreds of resections without a death. Another valuable commentary is the statement that cystostomy followed by resection is the safest prostatic procedure. With regard to bilateral cryptorchidism, the report that, of fifteen patients in whom orchidopexy had been done in childhood, nine were fertile is very encouraging. All urologists should read this book.

THE PAGET TRADITION

The Paget Tradition. By G. Grey Turner. (Pp. 148. 2s. 6d.) London: Cassell and Co.; Simpkin Marshall. 1938.

James Paget (says Professor Grey Turner), physiologist, pathologist, surgeon, and man of honour, was one of the greatest ornaments of the Victorian era. As the leader of the profession in his day he stood for rectitude in surgery. His example has become a tradition not only at St. Bartholomew's Hospital where he was nurtured but in all those parts of the world where it was carried by his many pupils. Of this tradition Professor Grey Turner has written three charming essays in language which does

credit to his knowledge of English. The first essay is the address he gave in Boston when he was presented with the Henry J. Bigelow medal. It tells the story of Paget's life and shows how he came to exercise so great an influence upon his generation. He was a teacher and consultant in the strictest sense of the word. Through the two small rooms of his little house in Harewood Place, then a dead end with locked gates into Oxford Street, passed for many years all that was interesting or obscure in English surgery.

The second essay is devoted to Stephen Paget, the youngest son of Sir James. It is entitled, "What Research Owes to the Paget Tradition," and is the eleventh Stephen Paget Memorial Lecture. Much of his useful and all too short life was spent in the service of the Research Defence Society. It was well said that "when it is one man's business to propagate a delusion and nobody's business to destroy it, Truth is apt to find herself more than usually hampered." Stephen Paget set himself to free her from the shackles. The third essay is entitled "Opportunity," and was the winter address given at the Welsh National School of Medicine in 1934.

The publishers state that the little book has been published at the request of Professor Grey Turner's past and present students. "No profit whatever is being made by the author, or in fact by anyone but the booksellers." Even they cannot be much in pocket, because it only costs half a crown; the money is well expended since it contains much of interest for every reader.

DISEASES OF THE BLOOD

The Diagnosis and Treatment of Diseases of the Blood. By Thomas Ordway, M.D., and L. Whittington Gorham, M.D. Revised by Raphael Isaacs, M.D. (Pp. 605; 33 figures, 15 coloured plates. 32s. 6d. net.) London, New York, Toronto: Humphrey Milford, Oxford University Press. 1938.

The textbook on *Diseases of the Blood* by Ordway and Gorham is described as revised by Dr. Raphael Isaacs and the foreword bears the date December, 1937. The reader is a little surprised to find that the pages are not numbered consecutively, some having been interpolated, and that there is a supplementary index. His surprise deepens into concern when he finds that the section on agranulocytosis contains no reference later than 1927 and makes no mention of amidopyrine under aetiology or of nucleotide, liver, or bone-marrow under treatment. An article on the hypochromic anaemias has been inserted, but the original chapter on chlorosis has not been altered to suit and still mentions cases of atypical or chronic chlorosis. Mitchell and Schmidt are quoted as finding that ferric chloride and ferric ammonium citrate, which are soluble, were much more effective in building haemoglobin than ferric oxide and ferrous carbonate, which are insoluble, without indicating that their experiments were performed on rats, and that in man the ferrous salts are more effective than the ferric. The account of anaemia in pregnancy is antediluvian, and pernicious anaemia of pregnancy "is recognised definitely as an haemolytic anaemia, probably produced by a toxin from the placenta." Treatment by hydrochloric acid and blood transfusions is advised, and the number of cases treated by liver is said to be "still too few to draw conclusions." No mention is made of nutritional deficiency under aetiology or of marmite under treatment. In the treatment of leukaemia more stress is laid on radium than on *x* rays, and on benzol and malariotherapy than on arsenic. In the chapter on haemophilia the value of snake venom is not indicated. Neither the original index nor the supplementary index refers to scurvy.

Enough has been said to show the many deficiencies of this book. "In few fields of medicine," says the foreword, "have more important advances been made in recent years than in the diagnosis and treatment of diseases of the blood." We can only warn our readers that no adequate account of these advances is contained in the volume under review.

BRITISH HEALTH RESORTS

Official Handbook of the British Health Resorts Association. (2s. 6d. net.) London: J. and A. Churchill, Ltd.

The new edition of the handbook of the British Health Resorts Association contains a vast amount of knowledge, succinctly set out, concerning the spas and the seaside and inland health resorts of Great Britain. This year a section has been incorporated giving particulars also of spas and climatic resorts in the Dominions and certain of the Colonies.

The coasts of the British Isles include five distinct climatic regions—north-western, south-western, southern, south-eastern, and eastern. Nearly all the places belonging to the first four groups may be described as winter as well as summer stations. Many seaside places in the south and west have a warm and equable winter climate, being largely unaffected by the cold polar currents, and protected from easterly winds by hills or wide spaces of intervening land. In addition to what may be called these regional climates there are innumerable local climates, depending on the aspect, shelter, geological formation, even the vegetation of a given place, and this may be of importance from the medical point of view. It looks as if, instead of the general advice to go to the sea, or the moors, or the mountains, or to a spa, the practitioner will have to prescribe health resorts with something of the particularity with which he prescribes drugs. In that event the handbook bids fair to form an excellent equivalent to the *Pharmacopoeia*. Under the editorship of Dr. Fortescue Fox, it is an authoritative and impartial publication, packed with detail, and the happy illustrations on every page almost make one want to be an invalid. The fullest information is afforded of the twelve spas of the British Isles (meaning by spas places at which establishments for medical use have been set up at the source of recognized natural medicinal springs). Particulars are given of the situation and history of each spa, its geology, climate, the constitution of its waters, and the bathing and other facilities. When so much is given it is rather churlish to ask for more, but a few more particulars of spa hospitals would be useful.

This spreading volume, which began many years ago as an inset in the *Medical Directory*, is now owned entirely by the British Health Resorts Association, which intends to secure for it a greatly increased circulation, largely among members of the medical profession. It is well on its way to becoming one of those few publications which are indispensable.

Notes on Books

Studies on the Physiology of the Eye, by J. GRANDSON BYRNE, M.D., LL.D., is reissued with supplement and new index by H. K. Lewis and Co. at 40s. It is a collection of papers, each more or less self-contained, and dealing with a large variety of subjects, but mainly with the innervation of the pupil and the lid, and with the proprioceptive system of the external ocular muscles. The work recorded deals essentially with experimental observations on the cat, and much space is devoted to the paradoxical reactions. Much in this collection of

papers departs from accepted teaching. It is possible to indicate only broadly the author's conclusions. He holds that the primitive response is of a chemical type, the stimulus acting directly on the muscle. It is this type of reaction which is responsible for paradoxical reactions. A later development is the chemico-neural response, the chemical stimulus acting indirectly through the neural centre. The highest state is the reflex response.

A valuable book of reference for all who have occasion to inform themselves about the London hospitals is *The Hospital Guide*, which has reached its fourth edition (price 3d.). It is published by the Advisory Hospital Committee of the Hospital Saving Association (30, Lancaster Gate, Hyde Park, W.2), and naturally has been compiled from the point of view of the contributory movement. One table shows the progress of the Hospital Saving Association itself, which in 1937 reached for the first time over one million pounds in contributions and had over one and three-quarter million contributors. Contributions and contributors have almost doubled since 1931. But the body of the *Guide* is full of information regarding all the voluntary hospitals of the metropolitan area, giving details of accommodation, charges or terms, hours of attendance in the different departments, and even bus routes and the like.

Fermente, Hormone, Vitamine und die Beziehungen dieser Wirkstoffe zueinander, by ROBERT and WILHELM DIRSCHERL, is published at Leipzig by Georg Thieme at the price of RM. 30. For ferments, hormones, and vitamins the authors propose the generic name of "ergines." According to their definition ergines (efficient substances) are such organic compounds as are formed in the living cell and necessary for the normal course of life in plants and animals. They act in such small amounts that their effect cannot be due to the energy produced by the combustion of the molecule. The book under review deals with the three groups separately and comprehensively and adds a chapter on the relations between ferments and ferments, ferments and hormones, ferments and vitamins, hormones and vitamins, hormones and hormones, and vitamins and vitamins. The literature seems to be taken into consideration well into the year 1937, but a bibliography would have been a very useful addition.

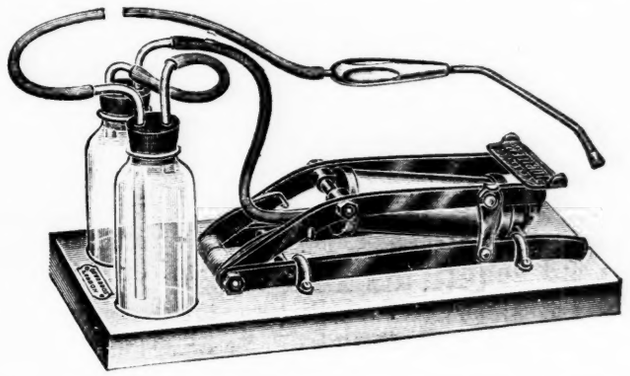
Not So Long Ago: A Chronicle of Medicine and Doctors in Colonial Philadelphia, by CECIL K. DRINKER, M.D., Sc.D., is published in this country by the Oxford University Press at 15s. Professor Drinker's great-great-grandmother, who was a member of a Quaker family which moved to the site of Philadelphia a few years before William Penn founded that city of brotherly love in 1682, kept a diary there for nearly half a century, until her death in 1807. Parts of this footnote to history have been already published, and Professor Drinker made use of other parts—and they were many—about disease, as a basis for a series of lectures at the Lowell Institute. These lectures have been utilized in this publication. The text of the diary has been scrupulously copied with all its abbreviations, inconsistencies, and mistakes. It tells the story of the large families which took up all the time of married women, if they lived, at a time when so many men had a succession of two or three wives. There is much about the diseases—tuberculosis, small-pox, yellow fever, "fever," and "the bloody flux" (dysentery, probably bacterial)—then rampant in Philadelphia, and the medical men, especially Benjamin Rush, who wrote a small pamphlet about "Old Drinker," who lived to be 103. Professor Drinker has added an extremely interesting running commentary on the records of a time when medical men were kept busy and "responded with a great armament of system and theory but with a minimum of fundamental knowledge." The contrast between medicine then and now is graphically displayed.

Preparations and Appliances

SIMPLE PORTABLE SUCTION PUMP

Mr. J. EWART PURVES (Bromley Common, Kent) writes:

Every surgeon has felt the need for a simple portable suction apparatus which could be counted on to give a sharp suction stroke when required. A motor-tyre foot pump



seemed to present a good basis for experiment. Messrs. Down Bros., by carefully balancing the reversed non-return valve, have produced a cheap and efficient suction apparatus, which can be relied on to clear a throat of mucus or blood clot and to remove fluid from an abdomen or a cyst which has to be tapped. If manipulated carefully it can also replace a Potain's aspirator. The bottles are of reasonable size, and the stand has been kept very simple to make the ensemble cheap and light.

PROTAMINE-ZINC-INSULIN

Protamine insulin (with zinc) suspension has been produced conjointly by Allen and Hanburys, Ltd., and the British Drug Houses, Ltd. It is a sterile suspension of protamine insulin (with zinc) with a reaction of *p*H 7.1. The preparation is slightly turbid and the phials must be shaken before use.

The introduction of the slow-acting protamine-zinc-insulin was an advance of very great importance in the treatment of diabetes, but hitherto its use has been hampered by the fact that it was necessary to mix separate solutions shortly before use. The manufacturers have surmounted this technical difficulty and have produced a preparation which will keep for six months after manufacture and for a fortnight after the rubber of the cap of the phial has been pierced. This represents a technical improvement of considerable practical importance.

The manufacturers issue a very useful pamphlet explaining the special properties of protamine-zinc-insulin and the manner in which it should be used. The value of protamine-zinc-insulin depends on its slow and persistent action, but this involves certain special dangers. The fall in blood sugar is so slow that warning symptoms of hypoglycaemia may not arise and a severe attack may follow suddenly; moreover the action is so long that it will outlast a single replacement of carbohydrate.

GONADOTROPIC HORMONE

"Gonadyl" (Roussel Laboratories, Ltd.) is a preparation of the gonadotropic hormone prepared from pregnant mare's serum. The preparation is in powder form in ampoules, and is dissolved immediately before use. Each ampoule contains 40 rat units (=160 mouse units). The gonadotropic hormone has been used with pronounced success in the treatment of cryptorchidism. It has been tried in a variety of disorders of menstruation and is also being tried for azoospermia and impotence.

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ROCKEFELLER AND THE FRONTIERS

The story is told of a revolution which broke out in a Central American city some twenty years ago. A medical investigator was engaged there at the time in studying yellow fever control and determined to continue his researches in spite of the hostilities. Every morning with a flag of truce he crawled through the barricades to collect his mosquitos on one side of the fighting line, and in the evening crawled back again to gather up his specimens on the other. Neither army molested him, but both thought him crazy—a man who, when great issues of human destiny were being fought out, spent his time catching insects. To-day in that part of Central America the revolution is forgotten, but the name of the investigator, Emmett Vaughn, is remembered as that of the man who helped to stamp out an age-long pestilence. Which is, of course, a parable. But a sorrowful footnote has to be written, that such is the present intensification of nationalism and racialism in various parts of the world that even the collecting of mosquitos is now sometimes impossible. Mr. Raymond B. Fosdick, the lawyer-president of the Rockefeller Foundation, in his *Review for 1937*, writes of the new international barriers which interrupt and embarrass the pursuit of philanthropic purposes and the advancement of knowledge. Objective scholarship, he says, is possible only where thought is free, and freedom can exist only where there is tolerance, where there are no "keep out" signs against the inquisitive and questioning mind. Disinterested research cannot survive in an atmosphere of compulsion and repression. In some fields the Foundation is finding it profitless to go where formerly it went. It is stopped at some frontiers, not because the frontiers have any greater geographical significance than they had a few years ago but because behind them the search for truth by eager and sceptical minds has been made impossible.

Nevertheless, the benefactions of the Foundation continue on the grand scale. In 1937—the year of J. D. Rockefeller's death—the Foundation appropriated for philanthropic purposes a sum of nearly two million pounds. Of this amount nearly one-quarter was given to the medical sciences, another fifth to public health, and the remainder for work in other social and natural sciences and the humanities. The largest single appropriations were £80,000 for the maintenance of Peiping Union Medical College, China; £70,000 to Harvard University for research on industrial hazards; and £60,000 to Yale for the Department of Psychiatry. The benefactions to public health took the form of aiding various health departments, education in public health, and the study and control of specific diseases. These diseases included yellow fever in South America and Africa, hookworm and schistosomiasis in Egypt, tuberculosis in Jamaica and Austria, scarlet fever in Rumania, influenza in Hungary, and malaria in a number of countries. Diseases know no frontiers and are no respecters of flags. "In this field of public health," comments Mr. Fosdick, "more clearly perhaps than in any other phase of human effort, one sees the complete inadequacy and meaninglessness of the conception of the absolute sovereignty of the State." The field studies undertaken during the year have added a good deal of information regarding the conditions under which jungle yellow fever occurs. The absence of *Aëdes aegypti* from infected areas has been amply confirmed, and further evidence has been accumulated suggesting that human cases are not essential—even that they are relatively unimportant—in the maintenance of jungle infection. The biological control of the insect vector, so successful in the case of urban yellow fever, is not applicable in this field, and the elimination of animal hosts is not economically possible throughout the vast regions of South America, where jungle infection abounds. The only hope of prevention at present lies in individual immunization of exposed populations by vaccination, and during 1937 well over 40,000 persons were vaccinated in Brazil and Colombia.

At present, in its appropriations for medical sciences, the Foundation is concentrating on assistance to psychiatry. The comment is made that mental disease is only now slowly being divested of the opprobrium meted out to misconduct. Mr. Fosdick speculates as to the attitude to the common cold if one of the early signs, along with sneezing and chills, was a transitory attack of kleptomania. "The ancients saw mental abnormality as a possession by demons; the quasi-modern layman still sees it as a disgrace; the modern man is coming to recognize it as a disease." It cannot yet be said that the development of psychiatry has paralleled the development of other branches of medicine. As a new science it has not yet gathered about itself a body of knowledge or trained personnel comparable to that achieved in other disciplines, and to its frequent isolation from the rest of

medicine must be ascribed the fact that it has sometimes run to strange cults and theories. The Foundation is trying to infuse medicine with psychiatry and neurology. Since 1932 it has given roughly £1,200,000 for this purpose. The appropriations for 1937 included £8,000 for the support of the Department of Experimental Medicine at Cambridge with a view to aiding in the development of psychosomatic studies in this country.

A discerning tribute is paid to J. D. Rockefeller, who was no mere distributor of largesse but a man of far-reaching vision. He did not hold the view, as so many benefactors have done, that wisdom came to an end with his own generation. He was not under the illusion that what seems important to-day will necessarily be important to-morrow. Therefore he did not tie up his Foundation to rigid and unchangeable purposes. Nor did he believe in the maintenance of the Foundation in perpetuity—"perpetuity," he was apt to say, "is a pretty long time"—and therefore the Foundation can and does spend its capital as well as its income. It has adopted some liberalizing provisions whereby, ten years after the date of a gift, the income from it may be used in whole or part for some purpose other than that for which the gift was made, and, after twenty-five years, the principal in part or whole may be so used, subject in both cases to the qualification that the new purpose shall be as reasonably related to the original as may be found practicable at the time, having regard to intervening changing conditions. This explains the occasional redirections of Rockefeller policy which have puzzled some people. Rockefeller and those who come after him have been anxious to free their work from the embarrassment of "frozen" funds and "tired" endowments, of which those who have to do with ancient—and some modern—foundations in this country know too much.

THE MANAGEMENT OF PHTHISIS

Much of recent discussion on the after-care of the tuberculous patient has been based on little more than vague surmise. A report[1] compiled by E. Brieger and edited by Sir Pendrill Varrier-Jones, Dr. Bachmann of Switzerland, and Dr. Bronkhorst of Holland, for the International Union against Tuberculosis, gives for the first time a comprehensive account of carefully sifted evidence from which more reliable conclusions may be drawn. In this country it is generally agreed that both the immediate and the remote results of "sanatorium treatment" are bad. The proportion of patients whose sputum contained tubercle bacilli discharged with negative sputum tests is disappointingly low. That it could be improved is brought out clearly in the report. This has been achieved by what Brieger calls "combined intensive treatment." He defines this as including prolonged rest, hygienic measures, chrysotherapy, collapse therapy, and surgical procedures used in various combinations and sequences with one object in view—healing the tuberculous lesion, which implies that no tubercle bacilli can be detected by culture of the sputum or culture and/or animal inoculation of the gastric contents. At the Bilthoven Sanatorium in Holland, for instance, the proportion of patients admitted with positive sputum tests and discharged with them negative has been raised from about 25 per cent. in 1921 to over 70 per cent. in 1936.

More time is needed before a true estimate can be made of the final results of combined intensive treatment, but it is claimed that the proportion of relapses in the patients discharged as "sputum-negative," or "conditionally arrested," is not increased. In such of these patients as remain under observation, any relapse is detected early and can also be dealt with by combined intensive treatment. The proportion of untreatable "good chronic cases" is, however, increased. Lawrason Brown and H. L. Sampson have defined this group thus: "A cavity, 2 cm. in diameter or larger, must be present. The general condition must be favourable. The temperature and pulse must be normal during the period of observation of several months. The appetite and strength must be good and the patient must sleep well. Expectoration may be present but must not be excessive. He is usually able to take some exercise. The number of tubercle bacilli in the sputum is not taken into consideration. . . ." The net result of applying combined intensive treatment is therefore to save lives, to increase the number of patients with healed lesions, and to enlarge the group of "good chronic cases" at the expense of the "bad chronic cases," which are those not conforming to Brown and Sampson's criteria. The problem of after-care arises not with those patients who are well enough to return to their work provided they can be trusted to live "reasonably," nor with those in whom the disease is so advanced that isolation in hospital is necessary, but with a large intermediate group. After-care is needed for the "conditionally arrested" patients, who must be rehabilitated before returning to their original jobs or to new occupations, and for the "good chronic cases." For the latter permanent settlement in an appropriately developed village, on the lines of Papworth, is indicated; for the former, a training centre.

[1] *After-Care and Rehabilitation.* By E. Brieger. Published by the *British Journal of Tuberculosis* as a special supplement, October, 1937.

The training centre and the village settlement are not alternative solutions to the same problem. Each meets a different need and has a different object in view, though there is no reason why the two should not form part of the same unit. It has been found necessary at Papworth to add to the village a large sanatorium-hospital section, well-equipped laboratories, and a surgical unit, and it has been thought that the period spent in a village settlement might be limited for the completely arrested case, so that in these instances the village settlement would function as a training centre. These things lead us to suggest that perhaps the whole problem of after-care might be approached in an opposite direction, beginning with the sanatorium and hospital, adding to them the training centre, and allowing the village settlement proper to evolve around these institutions. What is needed is a departmental unit completely equipped for the treatment and after-care of the tuberculous poor; for treatment and after-care are indivisible parts of the same entity. A patient cannot be expected to submit to prolonged treatment unless his livelihood and that of his family are assured in the event of his becoming, as a result of combined intensive treatment, a "good chronic case." It is fortunate that more than half of this group are unmarried. The falling mortality from tuberculosis gives no ground for complacency. Tuberculosis remains an important economic and social problem, the solution to which may partly lie in the evolution of units in which one authority has the sole responsibility for both the treatment and after-care of cases of tuberculous infection of the lung.

CHANGES IN TEETH FOLLOWING PARATHYROIDECTOMY

The incisor teeth of the albino rat are sensitive indicators of fluctuations in the metabolism of calcium and phosphorus, and are therefore useful in studying the physiology of the parathyroid glands. Schour, Chandler, and Tweedy,[1] in a recent re-examination of the influence of parathyroidectomy on the structure of these teeth, have confirmed some of the earlier findings of other workers, but not all. Some of the previous work was carried out on rats fed on diets now recognized as deficient in vitamin D, calcium, and phosphorus, which probably accounts for the differences now observed by Schour and his co-workers, who used a diet adequate in calcium, phosphorus, proteins, carbohydrate, fat, and, almost certainly, in vitamin D, though the content is not stated. Calcium formed 1.41 per cent. of the diet and phosphorus 0.98 per cent. The changes in the structure of the teeth were examined in respect to gross and microscopical changes in (Group I) eighteen rats which were allowed to survive 3 to 20 days; in (Group II) fifty-seven rats which survived 39 to 159 days; in (Group III) fourteen rats which survived 105 days and were subjected to fasting every seventh day; in (Group IV) eleven rats which survived four months to one year and which underwent repeated pregnancies and lactations; and in (Group V) twenty-seven controls. In Group I (short survivals) the dentine formed after operation was more densely calcified than normal. It is demarcated from the dentine formed before operation by a distinct ring (the calcio-traumatic ring), which appears to be an acute response to a shock to calcium metabolism. The denser calcification of the post-operative dentine may be a result of the calcium retention that is reported to persist during the early survival period. In Group II (longer survivals) calcification is defective; the longer the survival the more defective is the calcification. The dentine shows an irregular and accentuated alternation of zones of different densities in calcification, which is probably responsible for the readiness to fracture of the dentine of parathyroprivic rats. In Group III (long survivals with fasting every seventh day) the histological changes were found to be aggravated. In Group IV (long survivals with repeated pregnancies and lactations) there was no evidence of withdrawal from the calcified tissues of the teeth. Schour, Tweedy, Chandler, and Engel[2] have also compared the effects of parathyroid extract and of calciferol on the incisor of the parathyroidectomized albino rat. The effect of the parathyroid extract given to twenty-nine rats is the same as that observed in normal dentine—namely, a short primary hypocalcified region (staining with eosin) and a secondary hypercalcified region (staining with haematoxylin)—but doses which were ineffective in normal animals were enough to produce the typical response in the experimental animals. In some animals which survived longer than six days, however, the deeper-staining reaction receded and blended with the staining reaction of a normally calcified dentine. Generally, a calcio-traumatic ring was found, and cytological changes in the active enamel-forming cells were found in one-half of the animals. Similar changes were found in thirty parathyroidectomized rats, which were given single doses of 46,000 to 644,000 international units of calciferol. In this group of rats the serum calcium rose during the first three days after administration of calciferol, then declined slowly to the original level. The maximum height and the rapidity of the rise increased with the dosage. The earlier findings of these workers—that the presence of the parathyroids is not needed for massive doses of calciferol to exert their effect—is therefore confirmed.

[1] *Amer. J. Path.*, 1937, **13**, 945.

[2] *Amer. J. Path.*, 1937, **13**, 971.

POST-VACCINIAL ENCEPHALITIS

The incidence and fatality of post-vaccinial encephalitis formed one of the subjects recently discussed at the International Office of Public Health,[3] when Professor Reiter, the German delegate, stated that during 1936 ten suspected cases after primary vaccination had been reported. In five the diagnosis was supported by

[3] *Bull. Off. int. Hyg. Publ.*, 1938, **30**, 737.

clinical examination, but in none by necropsy. Three patients recovered and two died. The one necropsy which was performed showed meningitis but not encephalitis. According to Dr. M. T. Morgan, the British representative, five cases of post-vaccinial encephalitis, of which three were fatal, were reported in England and Wales in 1936, and three more in 1937 up to September 15, which were all fatal. The ages of the children ranged from 4 months to 15 years. As in the German cases the encephalitis was always the sequel of primary vaccination. No mention is made of a post-mortem examination. Professor G. Petragnani, the Italian delegate, stated that of 1,104,520 primary vaccinations and 1,205,971 revaccinations performed in Italy in 1936 and in the spring of 1937, only five cases were reported in 1936 and six in 1937. In every case the intradermal method was used. Of the eleven cases four were in the north of the kingdom, two in the centre, and four in the south. Ten occurred in the spring and only one in the winter. Six were fatal, and in two pareses appeared as sequels. The ages of the patients ranged from 8 months to 8 years, and no case occurred in children vaccinated at the sixth month in accordance with the law concerning primary vaccination. According to Professor Kling, the Swedish delegate, in the period 1924–36 inclusive there had been forty-three cases of encephalitis following primary vaccination with eight deaths, and eleven cases with two deaths following revaccination. As regards age distribution most of the cases appeared during the first two years of life and immediately before school age.

TREATMENT OF MYOTONIA

Recent work on the chemistry of the changes which occur at the neuromuscular junctions on discharge of the nervous impulse has led to important advances in the therapeutic field, especially in primary disease of the muscles. The action of physostigmine in delaying the destruction of acetylcholine by the cholinesterase has been found of specific benefit, for example, in myasthenia gravis. In that group of diseases in which the cardinal feature is myotonia—inability to relax the muscles after they have been contracted—a drug having the precisely opposite effect of physostigmine has recently been used with much success. Those who attended the Section of Neurology at the Oxford Meeting of the B.M.A. in 1936 may remember the cinematograph film presented by Foster Kennedy of New York which demonstrated strikingly the difference in the muscular actions of a man with myotonia congenita (Thomsen's disease) before and after injection of quinine dihydrochloride. In the report[1] on this film Foster Kennedy showed clearly that the action of quinine in abolishing the myotonic reaction of muscle could be antagonized by subsequent injection of physostigmine, which rapidly reproduced the original myotonia. A further study of the action of quinine in myotonia has been published by Kolb, Harvey, and Whitehill,[2] who have studied the effects of oral administration of this drug in eight cases of myotonia atrophica and in one case of myotonia congenita. Although perhaps the least incapacitating symptom of that heredo-familial disease better known in this country as dystrophia myotonica, myotonia is the one of which the patient is most conscious, and relief from it may help to compensate him for the weakness occasioned by the gross atrophy of the muscles and the premature senility which is so characteristic of the disease. Kolb and his co-workers found that by giving 0.6 gramme of quinine sulphate by mouth three or four times daily patients with myotonia atrophica could be kept free from the symptom of myotonia. There was no resulting increase in strength of the muscles as recorded by the dynamometer, although several patients declared that the muscles "worked better." After treatment with quinine had proved effective these patients were given injections of prostigmin, whereupon the myotonic reaction immediately reappeared, even if quinine were given at the same time as the prostigmin, which thus directly antagonized the effect of the quinine. Conversely, quinine counteracted the effect of prostigmin in myasthenia gravis, increasing the signs of that disease. Other therapeutic agents were investigated in the cases of myotonia atrophica, but none was successful. No symptoms of overdosage of quinine appeared with the large doses necessary to abolish the symptom of myotonia. It was found that smaller doses than 0.6 gramme three times a day were ineffective, and that if the drug was discontinued patients complained that the rigidity of muscles was worse than it had been before treatment was initiated. It would seem, therefore, that, once begun, this treatment must be continued almost indefinitely. Whether prolonged dosage with quinine will eventually have deleterious results has yet to be seen. No series of cases has been under observation long enough for any conclusions to be reached. In the meantime there can be no doubt that a valuable therapeutic agent has been found for the relief of a distressing symptom.

[1] *British Medical Journal*, 1936, **2**, 356.
[2] *Johns Hopk. Hosp. Bull.*, 1938, **62**, 188.

THE ROYAL MEDICAL BENEVOLENT FUND

Annual reports are usually dry enough documents, and the one hundred and second to come from the Royal Medical Benevolent Fund is no exception, for 200 of its 220 pages consist of lists of subscriptions and donations. But even these have their interest, because not only are the subscriptions shown for 1937 but also the total amount which the subscriber had given before that year, and it is encouraging to notice how many faithful friends this charity has enlisted. In several cases the accumulated total against a subscriber's name is over £100. It is also shown what considerable and widely distributed support the Fund receives from the Branches and Divisions of the British Medical Association, City companies, masonic lodges and chapters, medical societies, hospital staffs, and Panel Committees. Over seventy Panel Committees subscribed during 1937, one of them (Norfolk) making a gift of £117, and fifty Divisions and Branches of the B.M.A. contributed directly. But the purpose of an annual report is to remind subscribers that their subscriptions for the

current year are due, and as there is always a tendency for such documents to go the way of circulars and other ephemeral literature the Fund this year is issuing with the report, but in a separate envelope, a letter from Sir D'Arcy Power, chairman of the committee of management, and also a selection of typical stories of persons benefited. Sir D'Arcy Power describes briefly the activities of the Fund and the number of the grants and annuities. He mentions that the income from subscriptions has been doubled during the last ten years, yet still it only represents something under seven shillings for each medical practitioner in Great Britain. The great need is to enlist a larger number of annual subscribers; this would make it possible to raise the meagre amount given as an annual allowance in often very pitiful cases. Volunteers are also requested for honorary local secretaryships.

THE HEART IN RELATION TO ITS BLOOD SUPPLY

The efficiency of the myocardium depends largely on the quantity and quality of the blood in the coronary circulation, and two recent studies on this merit attention because of their practical importance. Kountz and Smith[1] of St. Louis have tried to assess experimentally the flow of blood in the coronary arteries of pathological hearts. The information was derived from perfusion and heart–lung preparations of revived beating human hearts. Under the conditions of their experiments the average coronary flow for normal hearts is estimated to be about 1.4 c.cm. per gramme of heart per minute. In the hearts of persons dying of cardiac disease the total flow through the coronary artery was often greater, especially in greatly hypertrophied hearts, but when reduced to the terms of unit weight it was found to fall below the level of 0.75 c.cm. per gramme per minute, which Kountz and Smith regard as a minimal safe flow for the function of the heart. In subjects with a history of heart failure the flow ranged from 0.15 to 0.6 c.cm. per gramme per minute. The lowest figures were encountered in arteriosclerotic hearts. Kountz and Smith consider that their work shows that hearts fail in chronic cardiac disease because of a limited flow through the coronary artery, which may result from either increased muscle mass or narrowing of the coronary vessels. In dilated hearts lengthening and stretching of the coronary vessels may be the chief factor. Tung and his associates,[2] in a careful investigation into the effect of severe anaemia on the heart, point out that in this condition the functional efficiency of the heart is of the highest importance, since increase in the cardiac output is an essential compensation for the diminished carriage of oxygen in the blood. The ten patients studied had severe chronic anaemia (haemoglobin values, 1.5 to 3.5 grammes per 100 c.cm., or averaging about 17 per cent.) and no other discoverable cause of heart disease; yet in only one of them was the heart normal. In six it was considerably enlarged and there was definite congestive failure, the venous pressure being elevated. Three patients had much enlarged hearts but little or no evidence of congestive failure. The degree of cardiac enlargement was assessed radiographically, and the difference between the measured area and the estimated normal area expressed as a percentage. The increases in cardiac area varied between 25 and 143 per cent. The *x*-ray illustrations reproduced in the paper reveal the gross cardiac dilatation which occurred in these anaemic subjects. In the light of the findings of Kountz and Smith in regard to the decrease in coronary blood flow caused by dilatation the viciousness of the circle is apparent. The poor state of the heart in severe anaemia explains the not infrequent fatalities attending rapid transfusion of blood in such cases. The dilated and failing heart cannot take on the burden imposed by a sudden augmentation in the total blood volume. Such fatalities not long ago formed the subject of articles by Plummer[3] and Pygott[4] and of correspondence in this *Journal*. The work of Tung and his colleagues throws light on these deaths. Transfusion in such cases may sometimes be essential, but it must be by a very slow drip method.

[1] *J. Clin. Invest.*, 1938, **17**, 147.
[2] *Chin. med. J.*, 1937, **52**, 479.

RURAL HYGIENE

Representatives of European countries are to meet in a conference summoned by the League of Nations for July, 1939, to consider the subject of rural planning and hygiene. The Council of the League, amid the graver preoccupations of its recent session at Geneva, approved the report of the preparatory committee for the conference, which has been sitting under the chairmanship of M. Wauters, Belgian Minister of Public Health. A similar conference was held in 1931 and drew up a programme of studies to be carried out under the auspices of the Health Organization. The conference recommended that another European conference should be summoned after an interval of a few years to examine the results achieved and adapt the proposals made to current problems and to the progress of public health technique. Such is the real origin of the conference to be held next year. One section of the preparatory committee's work deals with medico-social policy. The previous conference, it is stated, has exercised a considerable influence on the organization of public medical and assistance services in the rural parts of European countries, but it remains to extend the study to diseases which are still all too frequent in rural areas, such as typhoid and tuberculosis, together with diseases which affect both human beings and livestock. The conference will have at its disposal further studies carried out on the international plane by the Health Organization relating to sanitation, the cost and efficiency of medical and sanitary assistance, prevention of disease, and the "medico-social protection" of the rural population, by which last is meant nutrition, housing, and rural planning. The Health Organization has lately been undertaking, in conjunction with public health authorities, national nutrition committees, and European institutions and schools of hygiene, some further

[3] *British Medical Journal*, 1936, **2**, 1186.
[4] Ibid., 1937, **1**, 496.

studies on nutrition, in order to ascertain the effective consumption of particular groups of populations, to consider whether their dietaries are sufficient, and to evolve measures for combating defects. These studies have taken place in Belgium, France, Finland, and half a dozen other European countries. The composition of bread, and accordingly its nutritional value, has been found to vary much from one country to another, and even within particular countries. A study of bread, dealing with the species and sifting of cereals, the form of consumption, and so forth, will be available before the conference meets. As to milk, the Health Organization already has copious material at its disposal on the place which milk should hold in a system of nutrition, together with the hygienic questions arising in connexion with its production and distribution, and this material is being extended and completed. It is hoped that the participating Governments will later be in a position, on the basis of these extensive international studies, to give more detailed particulars in their several national monographs as to the nutrition of the rural classes in their respective countries. On this subject of nutrition, the Council has decided to invite the eighteen States within the League which have set up national nutrition committees to send representatives to Geneva for an exchange of views on subjects of common interest during the coming autumn. League countries which have national nutrition committees include the United Kingdom, with Australia and Canada among the Dominions, France, Belgium, Holland, Soviet Russia, Poland, Czechoslovakia, Latvia, and all the Scandinavian countries; also, outside Europe, Egypt and Iraq. The first meeting, held in February, 1937, derived great benefit from the participation of a representative of the committee recently set up in the United States, and it was decided to invite an American representative again to participate in the forthcoming discussions.

TRAUMATIC SHOCK

Recent experimental work on the nature of traumatic shock has demonstrated the relative unimportance of toxaemia, at least in the early stages of the condition. Toxaemia from infection, particularly by gas-producing organisms, which so complicated the picture of cases of shock in the last war, does not arise until a later stage. It is unlikely that the absorption of crush products is a potent factor, though, as Sir Henry Dale[1] has suggested, these may have some effect on capillary walls and so contribute to the loss of fluid, which is apparently an important, if not the most important, aetiological factor. The older surgeons looked upon the part played by nervous impulses as all-important—for example, Furneaux Jordan in the second edition of his *Surgical Enquiries* (1880) regarded the condition as "the result of a powerful impression applied to the nervous centres, or to a portion, more or less considerable, of the peripheral nervous expansion." Concentration on the factor of fluid loss has of late led to neglect of the nervous side of the question. Shock can be prevented by complete occlusion of the arterial blood supply to a limb before it is injured, and, as Slome and O'Shaughnessy[2] have recently pointed out, not only is loss of fluid prevented under these conditions but the limb may be rendered anaesthetic and the nervous factor eliminated. An examination of the action currents in the nerves passing from a traumatized limb showed that no abnormal impulses could be recognized for three-quarters of an hour after the injury, but that subsequently an almost continuous barrage of impulses developed. There is some evidence to suggest that an initial fall of blood pressure in a case of traumatic shock is caused by loss of fluid, and that a later and continued drop is due to the continuous discharge of nervous impulses. Control by appropriate analgesia or anaesthesia is therefore necessary, as well as the restoration of the blood volume, in the treatment of shock.

[1] *Proc. roy. Soc. Med.*, 1935, **28**, 1493.

[2] *Brit. J. Surg.*, 1938, **25**, 900.

REFUGEE DOCTORS FROM AUSTRIA

Sir Samuel Hoare, the Home Secretary, who was accompanied by Lord Winterton, the Chancellor of the Duchy, met at the Home Office on July 4 representatives of the British Medical Association, the Royal Colleges of Physicians and Surgeons, the University of London, and the Society of Apothecaries to discuss the question of the admission of some Austrian doctors to practise in Great Britain. It was agreed that it would only be possible to admit a limited number, that any such admissions must be the subject of careful selection, and that a committee representing the medical profession should be set up to assist in the selection. The Royal College of Physicians of London was represented by Dr. Robert Hutchison and Professor J. A. Ryle, the Royal College of Surgeons of England by Sir Cuthbert Wallace, the University of London by Sir William Girling Ball and Dr. A. M. H. Gray, the Society of Apothecaries of London by Mr. Hugh Lett and Sir William Willcox, and the British Medical Association by Mr. N. Bishop Harman, Dr. H. Guy Dain, Dr. J. W. Bone, Dr. G. C. Anderson, and Dr. A. Macrae.

Professor Sigmund Freud, now living in exile in London, was elected a Foreign Member of the Royal Society in 1936. As his health does not permit him to visit Burlington House to sign the ancient Charter Book of the Society the President and other officers have paid him the high honour of taking the book to him for his signature.

Professor Frank C. Mann, who is Director of the Mayo Foundation for Medical Education and Research of the University of Minnesota, will deliver in the Theatre of the Royal College of Surgeons of England, on Friday, July 15, at 5 p.m., a special lecture on the Mechanism of Peptic Ulceration, which is to be a review of the results of experimental investigations. Professor Mann is well known for his research into the problems of peptic ulceration, and the College is pleased to invite Fellows and Members to attend. Those who are neither the one nor the other will be admitted on presenting their private visiting cards.

SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

INJURIES IN THE REGION OF THE SHOULDER-JOINT

II. BONE AND JOINT INJURIES

BY

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One of the most important principles of the treatment of all fractures applies with particular force to fractures and dislocations of the shoulder: joints which do not need to be immobilized must be actively mobilized from the first day. If immobilization is not essential, mobilization is imperative. A fracture of the clavicle should not cause more than a few weeks' incapacity. But many healthy men have been incapacitated for a year or even incapacitated permanently by simple fractures of the clavicle treated with Sayre's strapping, which bound the fingers and hand flat against the chest wall. In other cases abduction frames have been used with a palmar splint so situated that the patient could not flex the fingers normally. With the tendency to oedema which exists immobility of the fingers for only two or three weeks may cause such a degree of adhesion formation that the patient is fortunate if he recovers in a year. The stiffness of the fingers is not only serious in itself, but it adds greatly to the difficulty in restoring shoulder movement where some stiffness may have been inevitable. The only stiff shoulders which are really difficult to treat are those associated with severe stiffness of the other joints of the limb. If the elbow, wrist, and fingers are normal the patient has an incentive to use the limb, and this functional activity rapidly restores movement to the shoulder. But if every joint, including the fingers, is as stiff as a board, it never occurs to the patient to use the limb at all; he gives up the impossible task, and the difficulties are greatly increased. The first principle, therefore, in the treatment of fractures of the clavicle and neck of the humerus, and of dislocations of the shoulder and acromio-clavicular joints, is that the patient must actively move the fingers, thumb, wrist, and radio-ulnar joints throughout their full range many times every day.

Fractures of the Clavicle

Fractures of the clavicle occur most commonly in the middle third following a fall on the outstretched hand. The inner fragment is displaced upwards by the sterno-mastoid, and the outer fragment is displaced downwards and forwards by the weight of the limb. The fragments can only be realigned by pulling the whole shoulder girdle, and with it the outer fragment, upwards and backwards and outwards. Scores of methods of immobilization have been described, and this in itself suggests that none of them is really perfect. Fortunately, however, these fractures almost invariably unite firmly in a few weeks, and the thickening which may result from imperfect reduction is usually absorbed and disappears in a few months. On the other hand, over-zealous attempts to maintain anatomical reduction by immobilization of the shoulder for many weeks may cause far more serious trouble from adhesion formation round the shoulder-joint.

Method of Treatment.—The figure-of-8 bandage method is simple, and if carefully used will give excellent cosmetic and functional results. The patient sits on the front of a stool, the operator standing behind with one foot on the stool and his knee between the patient's shoulder-blades. A large pad of wool is placed in front of each shoulder extending into the axilla. Several long bandages five or six inches wide are now applied in the form of a figure-of-8, passing in front of the shoulders under the axillae and crossing between the shoulder-blades. With each turn of the bandage the shoulder girdles are pulled backwards and upwards as strongly as possible without compressing the axillary vessels (Fig. 1). The bandages may be stitched together to prevent slipping, and it is advisable to reapply them every second or third day for the first fortnight. The tension of the figure-of-8 bandage prevents the outer fragment from displacing forwards, and the weight of the arm acts as a lever over the axillary pad, distracting the outer fragment away from the mid-line and correcting the overriding. For the first two weeks the shoulder is elevated by a triangular sling tied over the opposite side, but after that time it is left free for exercises. The finger-, wrist-, and elbow-joints must be exercised frequently from the first day. The figure-of-8 bandage may be discarded after three weeks when there is clinical evidence of union; there is no necessity to wait for radiographic evidence, which is much more delayed.

COMMINUTED FRACTURES

Occasionally the fracture is comminuted and a small fragment may be tilted out of position so that a subcutaneous spur develops. These fragments may be replaced by direct pressure after the main fracture has been reduced by the figure-of-8 bandage. Even if these attempts fail operative reduction should still not be contemplated. The sharpest of spurs usually absorbs and becomes rounded, and if any symptoms do remain it is very much more simple to remove the spur after union of the fracture than to attempt open reduction. The only indication for operation in recent fractures is the exceedingly rare complication of compression of the brachial plexus or subclavian vessels by displaced fragments.

Dislocation of the Acromio-clavicular Joint

If the ligaments of the acromio-clavicular joint are torn the weight of the arm displaces the shoulder girdle and acromion downwards below the level of the outer end of the clavicle. If the injury is confined to the ligaments between the acromion and the clavicle subluxation of the joint results, but if there is also a tear of the ligaments between the coracoid and the clavicle still more serious displacement develops. The dislocation is very easily reduced by elevating the whole arm and shoulder girdle, but it is just as easily redisplaced by the unsupported weight of the limb.

Immobilization by Strapping.—The limb must be kept elevated by strapping which encircles the clavicle above and the elbow below. A small pad of wool is placed in the axilla, and the wrist is slung from the neck by

a collar and a cuff with the elbow at a right angle. A pad of adhesive felt is placed below the elbow to protect the bony prominence of the olecranon and the ulnar nerve, with a second pad over the outer end of the clavicle. These two points are now pulled together by strips of brown strapping four or five feet long applied as tightly as possible (Fig. 2a). While the strapping is being applied the humerus is pushed upwards to elevate the scapula and the acromion, and the clavicle is pulled downwards. The strapping is easily stretched by the weight of the limb, so that five or six layers should be used, one on top of the other. It is a common mistake to apply the strapping over the top of the humerus and the shoulder-joint itself instead of over the clavicle and supraclavicular triangle (Fig. 2b). In these circumstances the surgeon is attempting the impossible task of compressing the humerus in its longitudinal axis. If the strapping is applied in the right place, and if the method is used conscientiously, excellent results may always be obtained and operative measures are unnecessary. It is, however, essential to tighten the strapping every second or third day by applying additional strips on top of the original and to continue the fixation for at least three weeks in subluxation of the joint, and for at least five weeks when the joint is completely dislocated.

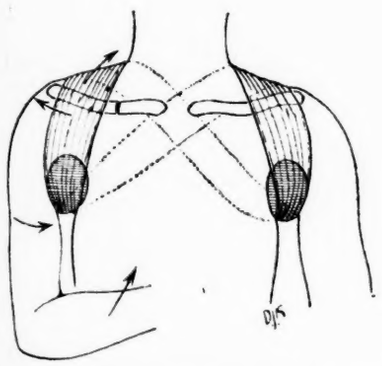

FIG. 1.—Figure-of-8 bandage with large axillary pads for fracture of clavicle. The outer fragment is pulled back by the bandage, distracted away from the mid-line by the leverage of the weight of the arm over the axillary pad, and elevated by a triangular sling.

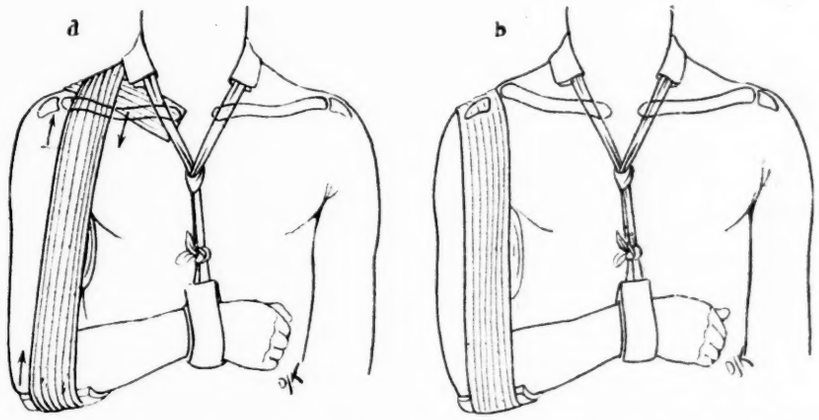

FIG. 2 (a and b).—(a) Correct and (b) incorrect method of strapping acromio-clavicular subluxation and dislocation. The strapping must pass over the clavicle and not over the top of the shoulder. It must be tightened on alternate days and retained for three to five weeks.

Dislocation of the Shoulder-joint

Since the head of the humerus does not occupy its normal position immediately below the acromion process there is loss of the normal rotund outline of the shoulder. The acromion is unduly prominent and there is a hollow beneath it. This hollowing may not be obvious on inspection owing to the marked swelling, but it is quite evident on palpation when the shoulder is compared with the normal side. All movements of the shoulder are limited and painful, and there is particular difficulty in putting the elbow to the side owing to the locking of the head of the humerus in its inwardly displaced position.

The limb must be carefully examined for nerve injuries. The deltoid muscle is often paralysed by injuries to the circumflex nerve, the posterior cord, or the outer trunk of the plexus. The examiner palpates the muscle belly with one hand and instructs the patient to attempt abduction movement against the resistance of his other hand over the patient's elbow. If the nerve supply is uninjured the muscle is felt contracting even although the shoulder is not actually moved.

Method of Reduction.—The head of the humerus is held in its inwardly displaced and inwardly rotated position by the tension of the subscapularis. To reduce the dislocation this muscle must be slowly and gradually stretched. The patient lies on a couch and the surgeon stands at his side. For a dislocation of the right shoulder the surgeon takes the elbow in his right hand and the wrist in his left. Strong smooth traction is applied to the humerus by pulling with the right hand. The arm is now very slowly and gently externally rotated by moving the wrist outwards until the normal limit of 90 degrees external rotation is reached. The limb being kept in full external rotation the elbow is brought forward in front of the chest. Finally the limb is internally rotated and the hand brought over to the opposite shoulder. The manipulation is performed so smoothly that the head of the humerus glides into position, and often the surgeon does not know at which stage the dislocation was reduced. There is no necessity to elicit any click or sudden jerk. Frequently such a click does not indicate successful reduction, but is due to movement from one dislocated position to another. It is essential that the accuracy of reduction should be confirmed not only clinically but also by radiographic examination.

After-treatment.—A small pad of wool is placed in the axilla well powdered with talcum, and a wisp of wool is similarly placed in the fold of the elbow to prevent intertrigo dermatitis. The wrist is slung from the neck by a collar and a cuff and the whole limb is bandaged to the trunk to prevent external rotation movement of the shoulder. The fingers, hand, and wrist must not be covered, and these joints are constantly exercised. All bandages and slings may be discarded in three weeks, and the patient regains movement at the elbow-joint and shoulder-joint by his own exercise. If the shoulder is immobilized for a shorter period there is a danger of recurrent dislocation, necessitating operative treatment.

Dislocation with Fracture of the Tuberosity.—Radiographs may show that a large fragment of the great tuberosity has been torn off at the time of the dislocation (Fig. 3). As a rule the fragment is in perfect position when the dislocation is reduced. An axillary pad somewhat larger than usual may be applied, but an abduction

frame is not necessary. Active movement of the shoulder is begun in three to four weeks, exactly as if there was no fracture.

Dislocation with Avulsion of the Supraspinatus.—In a proportion of cases the supraspinatus tendon has been avulsed from the tuberosity. The complication is rarely recognized until several weeks have elapsed. After the bandage and strapping have been discarded it is found that passive abduction is recovering more rapidly than active abduction. A greater range of passive than of active abduction in the presence of a normally contracting deltoid is clear evidence of rupture of the supraspinatus tendon. This complication was fully discussed in the preceding article (*Journal*, July 2, p. 30).

Dislocation with Paralysis of the Deltoid.—If there has been an injury to the circumflex nerve or one of the cords of the brachial plexus the paralysed deltoid muscle must be relaxed by abducting the shoulder in a frame. If the patient's arm is firmly bandaged to the frame but the trunk part is loose and can slide down, there is a danger that the joint may be re-dislocated. For this reason some surgeons defer the application of a frame for two or three weeks, but if it is skilfully applied it is safe to use it even earlier. At least seven or eight six-inch bandages must be employed to fix the trunk part of the frame and to hold it up, the turns of the bandage being hitched under every hook screw and bar and passed over both shoulders.

Stiffness and Myositis Ossificans due to Passive Stretching.—In the after-treatment of shoulder dislocations passive stretching by masseuses and manipulation under anaesthesia by surgeons must be rigidly avoided. There is no more certain means of converting temporary into permanent stiffness than by permitting passive stretching. It is now well recognized that myositis ossificans after dislocation of the elbow is due to passive stretching and that this practice delays the recovery of elbow movement. The only pathological difference between dislocations of the elbow and dislocations of the shoulder is that the elbow is usually dislocated in children, in whom the periosteum is loosely attached, whereas the shoulder is usually dislocated in adults, in whom the periosteum is firmly attached. For this reason elevation of the periosteum and "myositis ossificans" are more often seen in the elbows of children than in the shoulders of adults. The myositis ossificans is merely one evidence of the harm done to the child's elbow by passive stretching. The passive stretching is just as harmful to the adult's shoulder, even although there is no outward and visible sign.

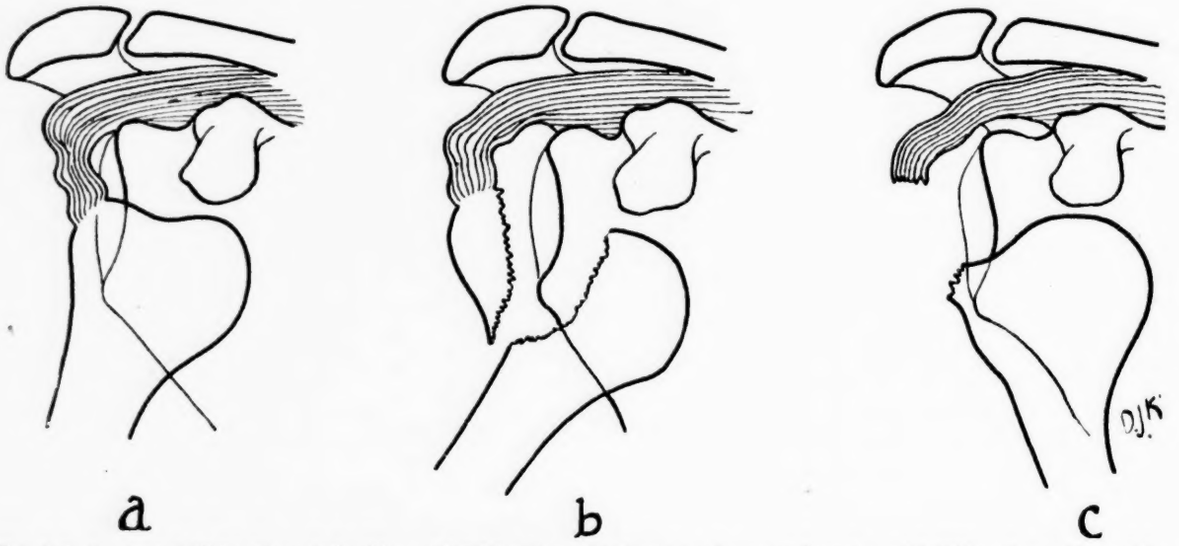

FIG. 3 (a, b, c).—(a) Dislocation of shoulder. (b) Dislocation with fracture of great tuberosity. (c) Dislocation with avulsion of supraspinatus.

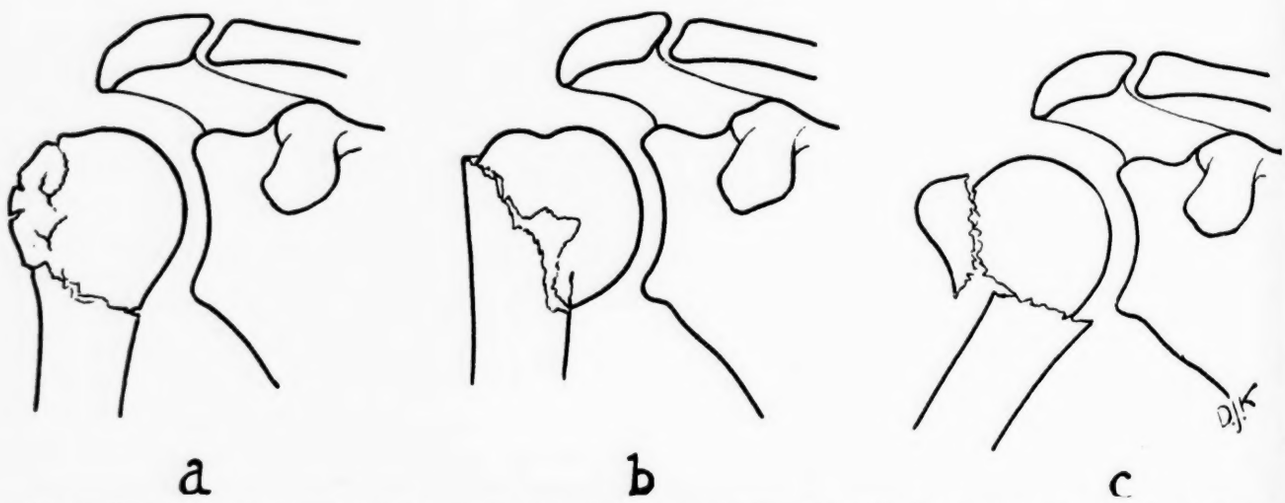

FIG. 4.—Three types of fracture of neck of humerus: (a) contusion crack fracture; (b) adduction fracture; (c) abduction fracture.

Movement must be recovered by the patient's own exercise. Attempts to accelerate recovery by stretching the joint or by manipulating it under anaesthesia will have exactly the opposite effect to that which was intended.

Fracture of the Neck of the Humerus

Three types of fracture must be distinguished: (1) contusion crack fractures, (2) adduction fractures, and (3) abduction fractures (Fig. 4).

Contusion Crack Fractures.—The injury follows a fall on the outer aspect of the shoulder, and the crack across the neck of the humerus is often associated with a comminuted fracture of the tuberosity. Complete immobilization is not necessary. The limb should be supported in a sling for two or three weeks, throughout which time the finger-, wrist-, and elbow-joints are exercised. As soon as the swelling and bruising of the shoulder have begun to subside active exercises are practised.

Adduction Fractures.—These occur equally commonly in adults and in children, and the fragments are impacted in such a way that the shaft is adducted on the head. If the displacement is not corrected abduction movement is permanently limited by a degree corresponding with the degree of angulation. In elderly patients this is unimportant, and the impaction should not be broken down by manipulation. Treatment is carried out exactly as for contusion crack fractures. In younger patients the displacement is reduced by traction on the limb in the abducted position so that the adduction angulation is corrected. The limb is immobilized on a frame in right-angled abduction for four to five weeks.

Abduction Fractures.—It is a serious mistake to believe that every fracture of the upper end of the humerus should be treated in abduction. Although an abduction frame is harmless or even advisable in adduction fractures it is the wrong treatment in most abduction fractures. The shaft is already abducted on the head and an abduction frame will perpetuate or increase this displacement. As a rule the displacement is not of serious degree and does not require manipulative reduction. The limb is supported in a sling in the adducted position by the side of the trunk. Movements of the finger, wrist, and elbow are begun at once and shoulder exercises are instituted in two or three weeks.

Very rarely the degree of abduction displacement at the time of injury is so extreme that the shaft is driven inwards beneath the head and completely detached from it. There is now no apposition between the fractured surfaces, and the loose head is completely externally rotated and abducted by the unopposed pull of the muscles inserted into the tuberosity. It may be possible to reduce the displacement by angulating the fragments on each other, adducting the shaft across the chest, and pushing the upper end outwards by a hand in the axilla until the fractured surfaces engage. The arm is then brought to the side and immobilized in that position for four weeks before active shoulder movements are begun.

If the manipulation fails to secure engagement of the fractured surfaces the proximal fragment remains fully abducted and externally rotated. It is now essential to abduct and externally rotate the distal fragment, but recurrence of the original displacement must be prevented by maintaining constant traction. An abduction fracture must never be treated in the abducted position unless continuous traction is applied and a special frame is employed. Skin traction by adhesive strapping is all that is necessary. Skeletal traction by olecranon pins should not be used. The traction must be of sufficient degree to prevent inward displacement of the shaft below the head. If this is not prevented the fragments will unite in this position, and it will be impossible to bring the arm down to the side. Frequent checking by radiographs is therefore necessary. The frame is jointed so that elbow movements may be practised, and the forearm, wrist, and finger-joints must be regularly exercised.

PREVENTION OF TUBERCULOSIS

NATIONAL CONFERENCE IN LONDON

The twenty-fourth annual conference of the National Association for the Prevention of Tuberculosis was held last week at the British Medical Association House in London and was largely attended by delegates from local authorities and other public bodies. The subjects of discussion included the organization of anti-tuberculosis activities in rural areas, the discovery and protection of contacts, the control of tuberculosis in tropical and subtropical regions (to which delegates from India and Tanganyika contributed), and the mental aspects of tuberculosis. The conference was preceded by the annual meeting of one hundred affiliated care committees, at which many suggestions were made for the employment of former tuberculous patients.

The conference, of which the Marchioness of Titchfield was president, was opened by the Minister of Health, Dr. WALTER ELLIOT, who quoted some statistics showing the great improvement which had taken place in the tuberculosis death rate since the middle of the nineteenth century. The rate had now fallen to about one-fifth of what it was then. He also spoke of the multiplication of facilities for prevention and treatment. In 1911 there were only some 5,000 or 6,000 beds in England and Wales available for tuberculosis cases; to-day there were nearly 31,000, and nearly 150,000 persons were examined for the first time in English dispensaries last year. The problem of rural housing, to which he was giving personal attention, was of great importance in tuberculosis prevention, and the legislation passed last year for the provision of new houses and reconditioning of soundly built old cottages could be regarded as a notable contribution in this field.

Tuberculosis in the Rural Areas

The first subject of discussion was the rural areas, where, said Dr. G. LISSANT COX, in opening, all the facilities for modern treatment, isolation of infective cases with unsatisfactory home conditions, education and preventive measures, examination of contacts, and so on, ought to be available just as much as in the towns, even though admittedly the tuberculosis incidence and mortality are lower in the country. He stressed as of first importance co-operation between the family doctor and the tuberculosis officer. It was possible to measure, in England at any rate, the different degrees of this co-operation, not by notification of cases, but by the number of persons sent to the official doctor or consultant before notification for an opinion as to diagnosis. In his own county (Lancashire) 92 per cent. of all new cases were so dealt with. Dr. Lissant Cox discussed the organization of the dispensary and the institution unit in rural localities.

Dr. A. M. FRASER also stressed the importance of the general practitioner, but questioned whether the general practitioner, as he was turned out to-day, was as well informed as he might be in these respects. Postgraduate training was of the utmost importance, and facilities should be available to all doctors at certain intervals. It seemed a pity that in the organization of postgraduate schemes for insurance practitioners local authorities were not given an opportunity to hold a stake, so that the schemes could have been made more comprehensive and include an intensive study of tuberculosis.

The administration of a tuberculosis scheme in rural Wales was described by Dr. V. EMRYS JONES. Among other things, he mentioned that the inhabitants of North-West Wales—Dr. Jones is tuberculosis officer for Anglesey and Carnarvonshire—were mainly a cultivated, well-read, and intelligent people, but highly fatalistic, and tending to regard tuberculosis more as a disgrace than a disease. The "spes phthisica" or optimism of the tuberculous was not as evident among them as it was in their neighbours over the border. The incidence of the disease was very high, the average annual rate for the last ten years being over 1,500 per million.

Discovery and Protection of Contacts

In a discussion on the discovery and protection of contacts, over which Dr. R. A. YOUNG presided, Dr. G. T. HERBERT said that the perfunctory examination of a contact was of little value, and might even be harmful in giving a false sense of security. A careful clinical inquiry must be supplemented by *x*-ray examination, at least screening, and usually by the taking of a film as well. It was unlikely that a single examination would coincide with the date at which incipient disease first became recognizable, and continued medical supervision seemed to be necessary, particularly during the susceptible age period. He had discovered active tuberculosis at the thirty-seventh dispensary attendance of a contact first examined as a child some ten years before.

Dr. G. S. BANKS said that it was disappointing to have to acknowledge that even now the first introduction of the tuberculosis officer to a tuberculous household was obtained by the haphazard and variable route of the private doctor. With a few exceptions—where, for instance, the doctor was swayed more by symptoms and perhaps by the knowledge of contact with an infective case in the household than by the chest signs—the average case of pulmonary tuberculosis sent to the centres was little less advanced than it was twenty years ago. There should be a more general method of case-finding, a wider net should be cast. All school children should be tested as a routine measure with tuberculin, and all who had reacted positively should be kept under observation by the tuberculosis officer, with whom the insurance practitioner should be associated, through the dangerous age periods of adolescence and young adult life.

Dr. C. H. C. TOUSSAINT urged upon administrators and sanatorium superintendents the grave danger of returning sputum-positive cases to their homes after only comparatively short periods of treatment. Prevention should be the basic policy of all the schemes, and too often prevention went by the board.

Mental Aspects of Tuberculosis

At the final session of the conference an interesting discussion took place on the mental aspects of tuberculosis, from the point of view both of the effect of tuberculosis on the mental life of the normal person and on the mentally disturbed patient. Dr. A. J. MORLAND asked whether people who got tuberculosis were any different mentally from those who did not. Why was it that the child with pulmonary tuberculosis tended to be precocious in mind and adult in manner? It had been suggested, in explanation of the number of men of genius who had been tuberculous, that the bacterial poison could actually increase mental activity. Much more likely was it that the possession of exceptional mental powers, which, as seen in writers and artists, rather militated against a regulated and temperate existence, made a man more likely than his fellows to develop tuberculosis. Perhaps Keats's trouble was due to the labour of his poetry superadded to the medical curriculum. Again, a normal person was more adaptable to his surroundings. In treatment the main problem was to get the patient to see his case in its proper perspective. "Many people when told they have tuberculosis start by being incredulous and refusing to accept so unpleasant a fact; others go to the opposite extreme, regulate their rest hours to the exact second, and become so completely wrapped up in their symptoms and treatment that being a patient becomes their life work."

Dr. A. A. W. PETRIE gave an analysis of the type of major mental disorders occurring among 126 cases of tuberculosis in an institution for certified mental cases. The manic-depressive type accounted for thirty-five, schizophrenia for thirty-five, and paranoid types for twenty-five. It had been suggested that schizophrenia was in itself a manifestation of tuberculosis, but it was doubtful whether there was any aetiological connexion. There was, however, no doubt as to a lowered resistance to tuberculosis in the case of schizophrenics; given exposure to the disease, a high proportion would contract tuberculosis. There had also been shown a definite diminution of resistance to tuberculosis in the siblings of schizophrenics.

On the other hand, Dr. J. BRANDER said that figures which he had been able to investigate showed that in reasonably favourable surroundings schizophrenics did not develop tuberculosis in any striking degree, though their susceptibility was suggested by the fact that six out of 106 patients submitted to pyrexial therapy by means of sulphur compounds developed pulmonary tuberculosis in fatal form within relatively short periods after the treatment. In the hospital of which he was medical superintendent (Friern Hospital, formerly Colney Hatch) the post-mortem records showed tuberculosis in the middle of last century to have been the cause of death in the institution in between 40 and 50 per cent. of cases. At the beginning of the present century the tuberculosis death rate was 12 per cent., and during the past ten years it had been 8 per cent. Great changes in hygiene and improvements in dietary having taken place in the intervening period, it might be inferred that the old special susceptibility of the mentally ill to be victims of tuberculosis was a myth, and that the problem was merely one of hygiene; nevertheless he believed a certain liability persisted.

Tuberculosis Death Rate in Mental Hospitals

Sir ROBERT ARMSTRONG-JONES mentioned that the resident medical officer at Papworth had stated that the number of cases in that colony which had developed mental symptoms and had been sent to a mental hospital was only one in 500 over the course of twenty years. At Claybury he had had experience of 16,000 insane persons, of whom 5,000 had died, and of these deaths over 800, or 16 per cent., were from tuberculosis. Deaths from tuberculosis in mental hospitals had gone down enormously during the last ten years—from 6.6 to 4.5 per 1,000 patients resident. In his experience at Claybury haemorrhage was very rarely seen in the tuberculous patient. Both in insanity and in tuberculosis there was low resistance, also a tendency to run in families. He regarded tuberculosis as a serious complication of insanity and, almost, as a natural termination of chronic brain disease.

Dr. E. RIST of Paris recalled that Laennec, writing about tuberculosis more than one hundred years ago, mentioned the importance of what he called the "sad passions," meaning worry and anxiety. Dr. Rist had carried out a study of conjugal tuberculosis. It was a striking fact that when one marriage partner was tuberculous the other rarely became so. On the other hand, when tuberculous husbands died or were removed to sanatoriums it was not infrequent for the widows or wives to develop tuberculosis, perhaps explainable on the ground of increased economic insecurity and responsibility for the children. Dr. NOEL D. BARDSWELL commented upon the irritability and fussiness of sanatorium patients, though he thought this might be attributable to the segregation rather than to the disease, for it was seen in other isolated colonies, even of normal people.

Sir PERCIVAL HARTLEY, who presided, said it had been claimed that just as the tubercle bacillus stimulated the

thermogenic centres and caused pyrexia, so it could stimulate the higher centres to increased creative faculty. It was worth remembering that Robert Louis Stevenson wrote or finished *Treasure Island* while a patient under strict regime at Davos, and that John Addington Symonds did some of his best work while a patient at the same resort.

The subject of the control of tuberculosis in tropical and subtropical regions was dealt with by Dr. C. WILCOCKS, lately tuberculosis research officer to the Government of Tanganyika Territory, Dr. E. COCHRANE of the Colonial Medical Service, Major-General E. W. C. BRADFIELD of the Indian Medical Service, and Dr. N. D. BARDSWELL, medical commissioner in Cyprus for the National Association for the Prevention of Tuberculosis, and Professor LYLE CUMMINS discussed the general subject. At the annual meeting of the National Association Dr. W. M. MACPHAIL, medical superintendent of Burrow Hill Sanatorium Colony, gave a short address on the work carried out at the Colony.

MENTAL WELFARE OF EX-SERVICE PATIENTS

A luncheon was given by the Ex-Services Welfare Society on July 1 at the Grosvenor Hotel, following a medical conference at which the mental sequelae of head injuries sustained during the war were discussed. Admiral Sir REGINALD TYRWHITT presided over the luncheon, and Lord HORDER, a vice-president, proposed the principal toast. Lord Horder congratulated the Society on the work it was doing for ex-service men; he assured the Pressmen present that the Society was a "good story." In the medical sphere it was doing exactly the field work which was wanted. Laboratory research was all very well, but without observation of the patient medicine could not advance. He quoted the remark of the great French physician Trousseau: "*Le malade, toujours le malade.*"

Neurasthenia and Employment

Sir ADAIR HORE, Permanent Secretary of the Ministry of Pensions, in responding to the toast, said that to-day the Ministry had 45,000 neurological cases on its books; of these, 29,000 were classed as neurasthenia, and the remainder as mental cases, some certifiable and others not, epilepsies, and other. The original shell-shock case had practically disappeared. The cases of neurasthenia and other troubles such as were now encountered were in men whose mental and nervous balance was—to use a nautical metaphor—just on the Plimsoll line of safety. In all treatment the occupational interest had been emphasized. It was most desirable to take the patient out of the atmosphere of what had been called "fireside gloom," the besetting danger of the neurasthenic. Sir Adair said that he wanted in the name of the Minister of Pensions to make one suggestion. Great Britain had in its social system the biggest scheme of economic security yet evolved—namely, social insurance of various kinds. The experience of the Ministry was that the majority of the men remained within this system, but a certain number tended to drift out of it, and the neurological cases were the most likely so to drift. If such a man got into intermittent employment he tended to lose confidence in himself. It was very important to get hold of such men and if possible get them back into insurance at full benefit. It was far better for such men to be in social insurance than for them to be in the insecure position of depending upon the success of an application for higher pension or for a grant from the Society. A scheme had been devised in the Ministry for assisting these men to get back into social insurance.

Mental Sequelae of Head Injuries

At the conference preceding the luncheon the general subject of discussion was the mental sequelae of head injuries. Dr. EDWARD MAPOTHER, Professor of Psychiatry, London University, and chief consultant to the Society, who presided, addressed the conference at some length on this topic.

Professor Mapother said that it seemed probable, judging from the cases of head injury in civil life, that the mental sequelae of head injuries in war had been underestimated by the Ministries of Pensions in this and other countries. He proceeded to some speculations about the physical basis of those mental sequelae which were clearly organic. Last summer he had analysed some 230 civil cases in which mental disorder of some degree was attributable to head injury. These included both the cases in which the relation was psychogenic and those in which it was physiogenic. Among the psychogenic cases the first group was the hysterias, and the second what he called the affective cases, those in which there was an outstanding deviation of mood related to the injury as an emotional experience. The cases which unquestionably had a physical basis fell from the psychiatrist's point of view into two main groups: those in which there was a specialized mental disability of some kind, with no general impairment, and those with a generalized mental syndrome. The first of these groups included conditions on the borderline between organic neurology and psychiatry. It might be divided into two subgroups, the first of which had a very good prognosis and the second a very bad. The first included such conditions as apraxias, agnosias, and aphasias, both motor and sensory, also pure amnesia for current events. There might be failure to distinguish the remote from the recent, and the imaginary from what had been perceptual experience. Such amnesia might coexist with perfect perception and comprehension, good memory of recent events, good association of ideas, good reasoning, insight, and entirely normal conduct. Such syndromes tended to clear up to a surprising degree, though they might leave slight residues. The second subgroup of specialized syndromes, which had an exactly opposite prognosis, included epilepsy, epileptoid mental paroxysms, and demoralization. The second main group consisted of syndromes in which the mental disability was generalized. In respect of these cases Dr. Symonds had emphasized a principle of great importance not only for understanding them, but for the theory of psychiatry in general—namely, that during the progress towards normality after a head injury the mental state passed through a series of stages. The total duration of mental abnormality might be an hour or several months, the halt which progress made at each stage was quite variable, and any stage might be so protracted as to constitute a psychosis; but the order remained always the same, exactly the reverse order to what was observable in progressive mental disintegration due to artificial intoxication or artificial hypoglycaemia, thus indicating that the syndromes or stages which could be discriminated depended upon the structure of the central nervous system, and not upon the specific influence of any causal factor.

Effect of Fracture of the Skull

After discussing the sequence of syndromes which seemed to correspond to stages of integration that normally succeeded one another in mental activity, and describing mental activity itself as a selective balance of reciprocal activations and inhibitions between the cortex and sub-cortical centres, Professor Mapother went on to point out that the degree of mental disturbance, immediate or late, had very inconstant relations to the amount of damage to the skull. A fracture might be present in a patient who had never been unconscious and had no subsequent mental complications. On the other hand, the worst results might occur in the absence of fracture. Nor could all the mental complications be ascribed to haemorrhage of any kind. He believed loss of consciousness to be due to disturbances of sub-cortical centres which were set up instantaneously at the moment of injury by general compression of the contents of the skull or by vibration. Therefore, despite the fact that it was disorder of the cortical processes that was perceived, it was a dysfunction of basal centres that was primary. The recovery of the cortex followed according to the rule that functions involving the simplest and most primitive integrations came back first, and those involving complex and more recent integrations returned last and were most apt to be left imperfect.

In civil injuries, such as road traffic accidents, one commonly saw fissured fractures or comparatively localized depressed ones; in war, smashing might occur by shell fragments, spent bullets, and high-velocity bullets fired very close. It might be that the head injuries of war were less likely to start mental disturbances of the generalized organic kind because their effect was more commonly confined to the hemispheres, and they were less likely to produce the instantaneous general compression of the contents which would damage basal centres. Penetrating wounds by bullets of medium velocity need not be associated with loss of consciousness or retrograde amnesia, but many war wounds, like those induced by a large fragment of shell or a blow on the head by a rifle butt, were liable to bring about results exactly comparable with those following civil injury.

Representatives of the Services and the Ministry of Pensions participated in an informal discussion. One point mentioned was that among the 200,000 people non-fatally injured in motor casualties a year, the insurance companies reckoned that 4 per cent. had a serious head injury. There was general agreement as to the seriousness and the prevalence of minor nervous disabilities following head injury, and the opinion was expressed that many who did not have any gross breakdown were none the less incapacitated for their work owing to the injury, and that this incapacity increased as time went on.

THE HUMAN SKIN

DR. LEONARD WILLIAMS'S LECTURE

The thirteenth annual Macalister Lecture (in memory of Sir John Macalister, secretary of the Royal Society of Medicine) was delivered at the National Temperance Hospital on June 30 by Dr. Leonard Williams. The lecture was entitled "This Mortal Coil," and in explanation Dr. Williams reminded his audience that German commentators—good Shakespeareans—took the word "coil" to mean the shuffled-off skin of the snake. The lecture was a provocative and delightful discourse on the skin—what Dr. Williams called the largest organ of the body, and, with the exception of the brain, probably the most complicated.

Physiology of Pigmentation

Those who took the trouble to trace the skin backwards in evolution, he said, could not fail to be struck by the solicitude with which Nature undertook its protection from the slings and arrows of outside attack. But when the genus *Homo* was reached Nature seemed to have exhausted her protective expedients, for man had, even in individuals in whom it was most profuse, only a meagre amount of hair and a capacity for producing pigment which in many cases was altogether insufficient; and it had to be remembered that, from the point of view of protection, hair and pigment were to some extent interchangeable.

The question of capacity to produce pigment in response to solar stimulus was of great interest, and, in view of modern means of transport, was likely to grow in practical importance. Why did the quite healthy young human being react so naturally to the wholesome stimulus of sunlight? The answer was not simple, but it might be said that inasmuch as the laying on of colour in the skin was a physiological act demanding a great deal of energy, Nature would not undertake it except when she was obliged to do so for the preservation of the race. The negro's black skin enabled him to thrive in any coloured man's country, whereas in a white man's land that same black skin shut out the solar stimulus to which the negro was accustomed and to resist which he was properly equipped. The real black was by no means happy in Southern Europe, and in Aberdeen he was miserable, not only because he could not make any money wherewith to get out, but because there was insufficient sunshine to keep his physiological fires burning.

Unfiltered Solar Rays

The cult of sunshine was by no means confined to nudist cranks. The therapeutic value of the solar rays had been recognized for several generations. What had not been recognized until comparatively recently was that, as in the case of most measures potent for good, the unfiltered rays were very potent for evil. The anaemic children who were sent in shoals to the seaside every summer doubtless benefited enormously, in the long run, by being subjected to the sunshine and other cosmic forces, but it was undoubtedly the case that in many instances the exposure was sudden and intensified when it should be gradual and partial. The summer sun was very powerful in northern climates and it beat pitilessly upon the fully exposed skins of little children, causing them to react by fever, with nervous and intestinal symptoms which were usually attributed to eating raw fruit or something equally harmless. Brunettes, though they might suffer in some measure, quickly acclimatized themselves by becoming swarthy, but the true blonde was seldom capable of offering effective resistance to solar onslaught. If blondes in general, and especially blonde children, either were given a separate course of medicinal iron or were to increase their intake of iron-containing foods before the sun's rays became piercing there would be more harmless enjoyment of open-air conditions.

Compatibility of Odours

After its colour the most important attribute in the human skin was its odour, which might be very delicate and highly agreeable. Undoubtedly, said Dr. Williams, the more delicate smells played an important though only partially recognized part in the life of the individual. One succumbed to the magic of a gracious lady's charm even as she entered a room. The element which decided the sympathy or antipathy in such cases was almost certainly the compatibility or otherwise of the body odours. If that element could be operative in the case of perfect strangers, how much more certainly was it likely to operate in the case of married people and candidates for wedlock? Indeed, it was high time means were invented for classifying people's bodily odours much as their blood groups were classified, so that that powerful factor in the suitability of two people for marriage might be accorded the place it deserved. In the matter of heavy odours, as opposed to the delicate, no serious student of the subject could be found to deny that odours irradiated from the human skin had a Freudian significance. There was really no escaping the fact that the human skin was intended by Nature to be odoriferous, the odour being intensified or decreased according to the stage of life.

The Facial Skin as a Record

After a brief reference to the other important functions of the skin, Dr. Leonard Williams concluded by urging his audience to bear in mind that both stimuli and their reactions left a record on the skin which was not only indelible but progressive. In spite of the masks which people opposed to the outside world, there was nothing so revealing as the skin on a person's face—its colour, its texture, and the folds and fissures into which it was drawn by the individual's indulgences, sufferings, and emotions. The skin of the face came to carry a merciless record, not only of the gross material side of existence, but of the more subtle thoughts. By middle age Nature had stamped upon the features the outcome of her past struggles. Indeed, "the mortal coil" resembled a scroll bearing the record of the fate of the talents with which an individual had been entrusted—which of them had been used, which misused, where the individual had conquered and where faltered and, perchance, fallen.

On the motion of Mr. Herbert Paterson, seconded by Dr. H. Sanguinetti, Dr. Williams was accorded a most hearty vote of thanks for his stimulating lecture.

EXCHANGE HOLIDAY VISITS WITH FRENCH DOCTORS

We have received particulars of a scheme for improvement in the knowledge of, and the relationship between, the English and French peoples. Few will disagree that in these times a better knowledge and understanding between our two peoples is much to be desired, and in this members of the medical profession can play their part.

The Scheme Outlined

Briefly, the idea is that an English doctor is put into touch with a French doctor of corresponding age and position, with a view to exchanging holiday visits as guests in each other's homes, thus avoiding hotel and other incidental expenses which are such a costly item to the visitor abroad. At the same time the visitor has in his host a reliable guide to the country. The community of interest between guest and host will, it is considered, add to the interest of the holiday and mitigate to a large extent the difficulties, where such may exist, of the two languages.

The organizers of the scheme have arranged with the railways on both sides of the Channel for a 40 per cent. reduction in the ordinary fares to be given for the journey throughout, thus reducing what is in effect almost the only cost to the visitor, apart from pocket money. This 40 per cent. reduction also applies to wives and children.

The idea is not restricted to the medical profession, but is open to all, the community of vocation, hobby, or denomination being the key to the contact established between the "opposite numbers." In practice the scheme operates in the following manner:

An English or French secretary acting for his profession establishes a list of applicants desirous of exchanging visits with a colleague in the other country. From these lists the secretaries choose, to the best of their ability, a suitable "opposite number" in each country. The applicants so paired are put into touch with each other and left to make their own arrangements. When dates of the visits have been decided, the applicants obtain from the secretary in their own country an "eligibility voucher" entitling them to a ticket to their destination at a reduction of 40 per cent. on the ordinary fares. The visitor will be met at the foreign station by his or her host, and henceforth all residential expenses will be defrayed by the host on the explicit understanding that the latter will meet with reciprocal treatment when he or she, in turn, becomes a visitor and guest in the other country.

Information from Applicants

The scheme has already been put into practice with much success for members of various occupations. The organizers will be pleased to hear from any doctors in this country who would like to take advantage of the scheme. Applicants are requested to state in their letter:

1. Their age.

2. The desired duration of their holiday abroad, with approximate dates.

3. The part, or parts, of the foreign country (including Algeria) which they particularly want to see.

4. Their willingness, at the end of their holiday, to return the hospitality of their host for a like period, and at a mutually convenient time, at their own house, with approximate dates for receiving the visitor.

5. The places of local interest which they can show their visitor on the occasion of the return visit, or generally the way in which they propose to entertain their visitors.

Letters of application should be addressed to Mr. D. Woodman, Anglo-French Exchanges Committee, 27, Euston Square, London, N.W.1.

CORPORAL PUNISHMENT

Under the auspices of the Howard League for Penal Reform (Parliament Mansions, Victoria Street, S.W.1) the letter printed below has been addressed to Sir Samuel Hoare, Secretary of State for the Home Department. It is signed by men and women prominent in public life and in various professions. The medical signatories are Dr. Alfred Salter, M.P., Dr. Havelock Ellis, Lady Barrett, Mr. C. J. Bond, Dr. A. Helen Boyle, Dr. William Brown, Dr. C. L. C. Burns, Sir William Collins, Dr. Ralph H. Crowley, Dr. Letitia Fairfield, Dr. Kate Fraser (medical commissioner for the General Board of Control for Scotland), Dr. Edward Glover, Dr. Thomas S. Good, Dr. R. G. Gordon, Mr. Somerville Hastings, Professor D. K. Henderson, Dr. E. T. Jensen, Dr. William Moodie, Dr. J. R. Rees, Dr. Jane Walker, and Dr. T. Drummond Shiels.

Letter to the Home Secretary

Three years ago we signed a letter to the then Home Secretary appealing for an inquiry into the question of corporal punishment. Some of the signatories to that letter held that corporal punishment under the criminal law could not be justified on any grounds; others that it could only be justified if it were proved to be essential for the protection of society.

The recently published report of the Departmental Committee on Corporal Punishment has proved conclusively that it affords no better protection to society than other forms of punishment. The only possible argument for its continuance therefore falls to the ground. To maintain it in these circumstances implies the acceptance of deliberately imposed suffering that serves no useful purpose. Such attitude is, we believe, foreign to the whole spirit of our penal code.

We recognize with gratitude that you yourself are following in the traditions of the penal reformers who believed in reformation rather than retribution. We therefore confidently appeal to you to implement the recommendations of the Departmental Committee at the earliest possible date.

LIFE ASSURANCE MEDICAL CONGRESS

The next International Congress on Life Assurance Medicine will be held in Paris from May 18 to 21, 1939, under the patronage of the Minister of Public Health. The honorary presidents are Dr. P. Hörnig (Berlin) and Sir Walter Langdon-Brown (London). The chairman is Professor M. Loeper of Paris, and the general secretary Dr. P. A. Carrié, 8, rue de Belloy, Paris, XVI. The following subjects in relation to life insurance will be discussed: (1) pulmonary tuberculosis; (2) hyperthyroidism; (3) obesity; (4) addiction to tobacco; (5) albuminuria; and (6) the value of statistics. The contribution for members of the congress, who must be medical practitioners engaged, whole or part-time, in life assurance work, is fixed at 200 francs; each may be accompanied by one person paying 100 francs. These payments give the right to the banquet, the evening parties, and excursions, and (for members) to a full report of the congress.

The second session of the International Congress of Anthropological and Ethnological Sciences will be held in Copenhagen from August 1 to 6, under the patronage of the King of Denmark and Iceland. The scientific meetings will be held at the University. Seven sections have been organized: physical anthropology, psychology, demography, ethnology, ethnography, sociology and religion, linguistics and writing. The congress will be followed by a three-days excursion to places of historical interest in Denmark. Arrangements for travel and hotel accommodation are in the hands of Wagons-lits/Cook (Thomas Cook and Son); other communications should be sent to the Secretary-General of the Congress, Nationalmuseet, 10, Ny Vestergade, Copenhagen, K.

Reports of Societies

CLINICAL PATHOLOGY

The summer meeting of the Association of Clinical Pathologists was held at the Nuffield Institute, Oxford, on June 25. The chair was taken by Dr. A. G. GIBSON, and more than seventy members and guests were present. The special discussion on the technique of medico-legal post-mortem examinations was opened by Sir BERNARD SPILSBURY.

Medico-legal Necropsies

Sir Bernard Spilsbury pointed out the importance in every case of a thorough examination of the organs of the head, neck, chest, and abdomen. He referred also to conditions which rendered it necessary to examine other parts of the body, and laid emphasis on external inspection as an important part of the examination. He described methods of recording injuries and of searching for hidden bruises by incision of the skin. The routine method of removal of the organs, ensuring that no important structure was overlooked, might have to be modified to meet special requirements—for example, in infants he removed in one mass all the structures from the floor of the mouth to the pelvis. A special dissection of the neck might be required in cases of strangulation or cut throat. It was important to open up the heart while it was still attached to the lungs and to open the intestines from end to end, noting the character and distribution of their contents. Finally he described the method of removal in one mass of the pelvic organs, and their examination, in cases such as those of abortion.

Use of Fresh Preparations

Dr. A. H. T. ROBB-SMITH read a paper on the use of fresh preparations in post-mortem work. He illustrated the value of these preparations in the identification of fat emboli, of pigments, and of deposits in the kidneys. For the recognition of fat emboli a small snippet of lung tissue was placed on a slide, moistened with 2 per cent. potassium hydroxide, and examined with a partially closed condenser diaphragm after the application of a cover-slip. The pulmonary tissue was rendered transparent, though the elastic fibres were not dissolved. The fat was seen lying in the alveolar capillaries, either as cylinders or as droplets radiating in a fan-shaped manner. The fat could be distinguished from air bubbles, since the latter had a broad dark rim with a bright centre, whereas the fat was uniformly colourless to the edge of the globule. The application to fresh specimens of reagents such as acids, alkalis, hydrogen peroxide, and silver nitrate enabled a distinction to be made between haemosiderin, haematoidin, malarial pigment, and melanin. These methods might be used also for the identification of small deposits in the pyramids of the kidney. These might consist of bilirubin, acid sodium urate, sodium biurate, or calcium carbonate. Bilirubin infarcts could be recognized by the characteristic rhombic or fine needle crystals and by Gmelin's reaction. This was carried out by rinsing thin slices of the kidney in weak potassium hydrate, then applying a cover-slip, and placing a drop of strong nitric acid at one side and drawing the solutions through with blotting paper ; the bilirubin deposits changed colour from green, through red, to blue. Uric acid infarcts had usually an amorphous form and were soluble in dilute acids without the formation of gas, calcium carbonate infarcts could be recognized by the formation of needle-shaped calcium sulphate crystals on the application of strong sulphuric acid, or of calcium oxalate crystals after the addition of hydrochloric acid and ammonium oxalate. They were also soluble in hydrochloric acid with the evolution of carbon dioxide. Gouty deposits of sodium biurate were identified by their characteristic crystalline form. Dr. Robb-Smith did not advocate the use of unfixed frozen sections, as these seldom supplied information which could not be obtained from a careful observation of the gross characters of the organ.

Status Lymphaticus

Dr. E. WORDLEY opened a discussion on the subject of status thymico-lymphaticus. He mentioned that the older textbooks on pathology were quite definite in their descriptions of a condition characterized by enlargement of the thymus and lymphoid tissues and associated with sudden heart failure and death. They accepted the association between such post-mortem findings and sudden death without any reservations, except to say that it was difficult to explain exactly how and why death occurred. He then briefly discussed the findings of a joint committee on status lymphaticus, which came to the conclusion that an enlarged thymus in itself could not be considered as indicating status lymphaticus, and that there was no definite evidence of general hyperplasia of lymphoid structures in cases with an abnormally large thymus. Dr. Wordley then discussed seven cases in which the original criteria justifying a diagnosis of status lymphaticus were all present. He gave certain figures which seemed to indicate that some cases showed an abnormal proportion of lymphocytes in films made from blood taken post mortem, and suggested that this point might be further investigated. He himself was inclined to the view that a diagnosis of status lymphaticus as the cause of death was justified in a limited number of cases.

In the discussion which followed the general feeling of the meeting was that sudden death after comparatively trifling causes was often found in individuals with an enlargement of the thymus and lymphatic glands and hypoplasia of the circulatory system. It was thought that it would be helpful if some scientific body, such as the Association of Clinical Pathologists, were to undertake a combined investigation of the cause of death in these cases and make recommendations as to nomenclature. It was decided to refer the question to the Council of the Association.

Before the scientific meeting at the Nuffield Institute a demonstration was arranged in the pathology department of the Radcliffe Infirmary. Here Dr. J. G. GREENFIELD demonstrated his method of removing the brain and spinal cord, Dr. A. H. T. ROBB-SMITH showed Graff's technique for removing the upper air passages and pharynx, and Dr. A. G. SHERA exhibited an electric rotary saw for the removal of the skull-cap and exposure of the spinal cord in post-mortem work.

A meeting of the North of England Obstetrical and Gynaecological Society was held in Newcastle on June 17. Dr. W. R. ADDIS (Manchester) described two cases of pseudo-myxoma of the peritoneum with lesions in the appendix. Mr. ST. GEORGE WILSON (Liverpool) gave an account of a case of carcinoma of the vagina secondary to carcinoma of the colon. Professor FARQUHAR MURRAY (Newcastle) discussed a case of a large sloughing fibroid in a nulliparous woman associated with cellulitis and bilateral white-leg, and detailed the operative treatment of a case of absence of the vagina in a girl aged 13. Dr. C. G. PAIN (Sheffield) showed a film, *White Cells in Action*, of the movement of normal leucocytes and the phagocytosing of streptococci.

Local News

SCOTLAND

University of Glasgow

At the commemoration day graduation ceremony of the University of Glasgow on June 22 the Principal, Sir Hector Hetherington, conferred honorary degrees upon sixteen recipients, of whom one, Professor Matthew John Stewart, is a member of the medical profession. Professor Stewart graduated M.B., Ch.B. at Glasgow in 1907, and is professor of pathology in the University of Leeds and pathologist to Leeds General Infirmary. He is a member of the Medical Research Council and has published various studies on pathological subjects, including gastric ulcer, the cellular reactions induced by cholesterin deposits, and sacro-coccygeal chordoma.

Royal (Dick) Veterinary College

At the annual prize-giving of the Royal (Dick) Veterinary College, Edinburgh, on June 27, Lord Rosebery, who presented the prizes, said that veterinary science was doing an enormous amount of work to ameliorate the condition of animals in this country and to help their owners. He announced that the Totalisator Board, which distributed a certain amount of money for purposes apart from racing, had given £1,000 towards this College, and the Board had also given £1,000 towards research work in connexion with grass sickness in horses. The chairman, Sir Thomas Hudson Beare, in a short review of the work of the College during the session, referred to the death of Dr. Charnock Bradley, the late principal, who had guided its destinies for over a quarter of a century. His final illness had been largely due to overstrain and overwork, and the governors had decided that the new principal when appointed should be freed from teaching work. He hoped within about a week to be able to announce the new principal and the new professor of anatomy.

St. Andrews University

At the graduation ceremony on June 30 of the University of St. Andrews the Vice-Chancellor, Sir James C. Irvine, conferred the degree of LL.D. upon five recipients, including one member of the medical profession, Professor E. D. Adrian, F.R.S., of the Chair of Physiology in the University of Cambridge. Professor Blyth Webster, in presenting Professor Adrian for the degree, said that he was a graduate of Cambridge, Oxford, Harvard, and McGill, and had done valuable work on the physiology of nerve and the integrative action of the nervous system. By experimental work of unusual delicacy he had brought the complexities of this subject within the range of analysis, for which, in 1932, he had been awarded jointly with Sir Charles Sherrington the Nobel Prize in physiology and medicine. Since the foundation of the Nobel Prize in 1901, out of more than eighty awards about a quarter had gone to scientific men in Britain, and it was a rarer honour that both awards in the same field should have fallen to this country in one year.

At the same ceremony Professor Gordon Campbell was installed in the Chair of Dental Surgery, being the first professor of dental surgery in Scotland. The Vice-Chancellor said that the foundation of this chair was the culmination of long years of patient effort, and thanks to the generosity of some public citizens in Dundee and to the enthusiasm of a group of able dental practitioners in that city the Dundee Dental Hospital had come into being, and had presented an opportunity for the University to join in the new movement which had resulted in the present satisfactory position. Special thanks were due to Mr. William Boyd, whose liberal endowment had enabled them to found this chair. Twelve diplomas in Dental Surgery and two in Public Dentistry were afterwards conferred by the Vice-Chancellor, the recipients being the first University graduates in this department in Scotland. The number who received the degrees of M.B., Ch.B. was forty-six, while two received the M.D.

ENGLAND AND WALES

The Minister of Health at Sheffield

Dr. Walter Elliot, Minister of Health, visited Sheffield last week to open the Firth Park Maternity and Child Welfare Centre and the Coisley Hill Sewage Works, which have been provided by the corporation. At the opening of the new sewage works he said that the ideal of sewage engineers meant that the rivers of the country should receive only what was right to flow down them to the sea. We were recovering, though slowly, to-day from one of the worst features of the industrial revolution—namely, the throwing into our rivers of untreated waste products of all kinds. Purification of sewage, by helping to clean our rivers, was part of a bigger thing—that of preserving the countryside, of being a good neighbour, of preserving health, and of doing what was right. If everybody showed the same care and was as up to date as the Corporation of Sheffield and its ally, the Chesterfield Rural District Council, much more would be done to make our rivers clean. Nothing could be more beautiful than a beautiful river, and nothing could be more loathsome than a river which was foul, polluted, and dead. At the opening of the maternity and child welfare clinic Dr. Elliot referred to the decline in the infant mortality rate per 1,000 live births from 136 in 1885 to 58 in 1937, and to the recent decline in the maternal mortality rate. The problem of maternal mortality still required, however, to be attacked in every possible way, and much was to be expected from the recent Midwives Act and from the steps which his Department had taken following the publication last year of a report on a series of intensive investigations by medical officers of the Ministry. Team work was the keynote of the attack. The Firth Park Clinic marked in Sheffield the beginning of a scheme of decentralization, and he commended this example to other local authorities. Clinics should be established in the outlying parts of big towns, so that the entire population could be served. It was vital that when health services had been provided the people should be told of their existence, and he congratulated the Sheffield Corporation on the efficient manner in which it had joined in the recent public health campaign and had told the people of Sheffield in no uncertain manner what it was doing for them.

After-care Work of the Merseyside Hospitals Council

The headquarters in Lord Street, Liverpool, of the Merseyside Hospitals Council is the centre of a department concerned solely with the transfer of patients from hospitals to convalescent homes, and with the allied aspects of after-care. There is an all-too-prevalent impression that the work of the Council begins and ends with the penny-in-the-pound scheme. That is a vital part of its work and is the foundation of, and largely the justification of, its existence. But it is not the whole story. The Council has a variety of co-ordinated activities, and this after-care department is one of them. Established eleven years ago, it is a closely knit piece of organization, doing its own specific work as an integral part of the entire activities of the local group of thirty hospitals. After-care has a much wider application than convalescent home treatment, and it is through the work of the department's visitors to the homes of the patients—skilled and sympathetic full-time social service workers—that the full

possibilities of after-care are realized. These home visitors, many of whom have made a close study of social science, divide much of their time between the hospitals and the homes of the patients. Their services are in constant demand, and the information they gather becomes the basis of action by the department in the way of arranging for convalescent home accommodation, or in some other way supplying the urgent needs of those who have just passed through hospital wards and are fit subjects for some form of after-care. In this work of mercy medical men, hospital matrons, sisters, and nurses co-operate with the department's visitors.

Health Congress at Portsmouth

Nearly fifty papers and addresses will be read and discussed during the week of the Health Congress, which opens at Portsmouth on Monday next. In the section of architecture, town planning, and engineering, over which Sir Raymond Unwin presides, town planning and the safeguarding of public water supplies will be discussed. Air raid precautions will be dealt with in the conference of representatives of local authorities, and in connexion with this discussion a mimic air raid has been arranged for Wednesday evening, July 13, in which the full A.R.P. organization of the city will be seen in action. Among other subjects to be discussed are rheumatism, introduced by Lord Horder, the future of the general hospital, the Food and Drugs Bill, defects found in school entrants, meat inspection, and health propaganda among natives in the Tropics. During the week a Health Exhibition is being held in the Connaught Drill Hall. As recorded in the *Journal* of June 25 (p. 1373), the Duchess of Gloucester opened an exhibition at the Imperial Institute a short time ago of more than 200 photographs illustrating progress and activity in Kenya. A supplementary series of photographs deals with some aspects of the work of the Medical Department in Kenya, with special reference to the part played by Africans. These photographs will be on view in Portsmouth next week at the Health Exhibition of the Royal Sanitary Institute.

Welsh National Institute of Radiotherapy

The chairman of the Welsh Board of Health on June 23 convened a conference, which was attended by representatives of county councils, county boroughs, and boroughs in South Wales, and of the Welsh School of Medicine and the large hospitals, to discuss a proposal to establish a Welsh National Institute of Radiotherapy to serve the whole of South Wales. The proposal is stated to have the approval of the National Radium Commission. During the discussion on the scheme Sir Ewen Maclean mentioned that the Miners' Welfare Fund of South Wales had donated £5,000 towards the project, and the Cardiff Royal Infirmary had announced its readiness to give £15,000 from its Centenary Fund Appeal.

Conditions of Nursing Service

The Interdepartmental Committee on Nursing Services which, with Lord Athlone as its chairman, is investigating conditions of service in the nursing profession, is issuing a questionary to all hospitals. The object of this is to obtain statistics for the country as a whole on such matters as the hours nurses have to work, the salaries they receive, and the length of their annual holidays. This is the most comprehensive survey of the kind ever undertaken in this country; the committee, which has been receiving evidence from various bodies and associations since last January, has found that its consideration of several important problems has been seriously handicapped by the lack of any general statistics. Other matters dealt with in the questionary are the numbers of nurses of the various grades employed by each hospital, the arrangements in operation for the training of probationers, and the reasons which cause so many probationers to leave the nursing profession during their first years in the service.

Correspondence

Uterine Rupture following Caesarean Section

SIR,—The paper on "Uterine Rupture following Caesarean Section" by Mr. C. E. B. Rickards (*Journal*, June 25, p. 1359) is timely and instructive. For better or for worse, Caesarean sections are being performed more frequently each year, and this late complication of the operation consequently becomes a more and more common emergency of obstetric practice.

Mr. Rickards quotes Eardley Holland as saying that 4 per cent. of Caesarean section scars rupture during a subsequent pregnancy or labour, and this figure is now also quoted in various textbooks of obstetrics. The statement is taken from Holland's analysis of the after-results of 1,605 cases of Caesarean section, published in 1921 (*J. Obstet. Gynaec. Brit. Emp.*, **28**, 488); but, as so often happens, the sentence taken from its context is misleading and has caused many people to underestimate the frequency of this accident.

The following is an abbreviated table taken from the article in question:

Delivery by natural passages	78 cases
Repeated Caesarean section	352 ,,
Rupture of the scar	18 ,,

It will be seen that out of the 448 cases listed there were eighteen ruptures, which is the origin of the "4 per cent." so often quoted. But a little consideration will show that this figure is easily misinterpreted. The majority of women in this group were subjected to a repetition of the Caesarean section (presumably before the onset of labour) and were therefore deprived of the best opportunity of rupturing their scars. On the other hand, it would be equally fallacious to say that eighteen women ruptured their scars out of the seventy-eight who were delivered by the natural passages, for many of the ruptures may have occurred *before* labour, and the number would therefore be artificially loaded by cases which should, in a sense, belong more rightly to the "repeated Caesarean section" group.

In short, although 4 per cent. represents the proportion of women who did in fact suffer from rupture of the uterus, this figure does not represent the percentage of women who would rupture the uterus were their pregnancy allowed to go to term and to end in natural labour: the actual number of ruptures can be counted, but it is impossible to find a denominator by which the real frequency of the accident may be estimated. There is little doubt that the figure of 4 per cent. seriously underestimates the average risk which a woman runs of rupturing her uterus during subsequent pregnancy and labour after a classical Caesarean section.—I am, etc.,

CHASSAR MOIR.

Department of Obstetrics and Gynaecology,
University of Oxford, July 4.

When to Start Sulphonamide Treatment in Gonorrhoea

SIR,—The published results of sulphonamide treatment justify a hope that in this group of remedies may eventually be found the "606" of gonorrhoea, but it seems possible that at first their misuse may lead to an increase in its incidence. As everyone with experience of this form of treatment knows, in a large number of cases of acute gonorrhoea it causes a rapid cessation of discharge, which leads the patient to believe that he has been cured.

Unfortunately, in a certain proportion of cases when the treatment is stopped the discharge returns as profusely as ever. In such cases after resumption of treatment the same thing may be repeated a number of times, and eventually the duration of the attack may be found to have been longer than it would probably have been under ordinary treatment. It seems not unlikely also that when the treatment has to be resumed a number of times on account of relapse the germ may become sulphonamide-resistant. Further, in one of the periods when such a patient sees no discharge he is apt to resume sexual intercourse, passing on the disease to his consort.

For these reasons alone it seems to be most desirable that there should be agreement among practitioners as to the method of using the sulphonamide remedies which will result in the minimum of relapses after the administration of such an amount as causes the least possible proportion of toxic effects, and in this connexion the point in the course of the disease at which the treatment should be started seems to be particularly important.

In a discussion on sulphonamide treatment of gonorrhoea which was opened by Dr. Hanschell at a meeting of the Medical Society for the Study of Venereal Diseases in October, 1937, I drew attention to the views of H. Felke (1937) to the effect that treatment with the sulphonamide preparation "uleron" ought not to be started for at least two weeks after the attack began: otherwise the result would be indifferent. He considered that, in order to obtain the best effect of the remedy, the tissues should have acquired some of that resistance to the gonococcus which we know is essential to natural recovery. Felke's views seem to me to be supported by results previously reported by Grütz (1937) with the same remedy, and further evidence to the same effect has been afforded by other German workers, notably Fischer (1937) and Schreus (1937). The latter worker recommends in fresh cases that the patient be prepared for the sulphonamide treatment by administration of gonococcal vaccine during the first six days, treatment with "uleron" being started on the tenth. My own experience with "uleron" here, and recently in Jamaica in collaboration with Dr. S. E. Ferreira, the Island V.D.O., supports the view that if one will wait until the attack is at least three weeks old before starting treatment, comparatively little "uleron" (four or five days' treatment) brings the attack to an end in the majority of cases, and toxic effects are very few.

Using another sulphonamide remedy, "sulfanilamide" (which appears chemically to be the same as the preparations known as "sulphanilamide" and "prontosil album" in this country), Herrold (1937) in the U.S.A. doubted if more than one-third of acute cases would be cured in one to three weeks with even maximum doses, but believed that two-thirds of the chronic cases would be cured in two to four weeks with moderate doses. Van Slyke, Thayer, and Mahoney (1937) also in a recent paper have reported results which seem to show the advantage of waiting. Counting as acute all cases with infections of less than twenty-eight days' duration and as chronic those with infections older than this, with given amounts of treatment with sulphanilamide they had fifteen failures in sixty-three acute cases and only one in thirty-six chronic ones.

On the strength of this evidence I suggest that it is better in all cases to wait until the attack has lasted three weeks before starting treatment with any of these remedies. In this period very few men indeed would indulge in sexual intercourse, and the greater certainty of cure out of hand when the treatment is started then makes it possible that universal adoption of a rule to wait as suggested would result in a reduction of the incidence of fresh infections. I am encouraged to hope that I may be supported in this recommendation by the knowledge that some directors of clinics in this country have already adopted such a rule. I have brought the matter forward at this stage in the hope of provoking such discussion as will give practitioners clear guidance on the best method of using a very valuable group of remedies.

May I add that I think that the present chemotherapy is likely to fail in any case where the local drainage is defective.—I am, etc.,

London, S.W.1, July 1. L. W. HARRISON.

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Sulphanilamide Treatment of Gonorrhoea

SIR,—I should like to allude briefly to four cases illustrative of two conditions which in my opinion have resulted from the sulphanilamide treatment of acute gonococcal urethritis. In each case, following the adequate administration of sulphanilamide tablets with suitable local therapy, the urethral discharge dried up and the urine became clear by the tenth day. After a further fourteen days of local treatment only all four patients were untreated for fourteen days. At the end of this time prostatic smears were examined. In two of the cases there was a slight bogginess of the right lobe of the prostate, which subsided with massage, and the smears showed pus, epithelial cells, and well-formed gonococci occurring both intra- and extra-cellularly. These tests have been repeated on several occasions during the past four weeks with very similar results, and at no time has there been any reappearance of urethral discharge or haziness of the urine. Such a finding would suggest "prostatic latency," the dangers of which cannot be overestimated.

Dr. A. E. W. MacLachlan, director of the Newcastle-upon-Tyne clinic, mentioned this tendency early in 1937 in correspondence, and will shortly be publishing a full account of his observations. The other two cases, having undergone varied provocative measures satisfactorily, were provisionally discharged and told to report again in six weeks' time. Both returned within thirty-six hours with evidence of a slight muco-purulent urethral discharge and a slightly hazy first urine with threads. The smear test showed a few epithelial cells, fairly numerous pus cells, and extracellular gonococci in large numbers. I did not consider the possibility of a newly acquired infection in either case, because the average incubation period in this area is five days, and I have never known it to be less than two days. After washing out the urethra with a weak silver solution a urethroscopic examination revealed a definite cystic littritis. This had obviously existed without giving rise to the usual signs and despite provocative instrumentation; it may therefore be referred to as a "latent littritis."

The moral would appear to be that it is most essential to examine prostatic smears repeatedly, and to carry out routine urethroscopy in all cases, even where there exists no definite indications for such procedures. This is infinitely better than being lulled into a false sense of security by the "apparently dramatic cure."—I am, etc.,

W. GILLIES ANNAN, F.R.C.S.,
Clinical Medical Officer,
Durham, June 14. Durham County Council.

Sulphanilamide in Staphylococcal Skin Infections

SIR,—It would seem to be generally held that sulphanilamide is of little or no value in the treatment of staphylococcal infections in man, though laboratory work has shown that, in mice, the drug has some slight protective action. This unfavourable view must obviously be based on good clinical evidence, but inasmuch as this evidence may perhaps be drawn from the more serious and late cases that are treated in hospital, it appeared to me worth while to try the drug in some of the common staphylococcal infections of the skin which, in the first place at all events, are seen by the general practitioner. The results in a small first series of cases are given below, and may be tentatively summarized by saying that in multiple lesions, such as Bockhart's impetigo, sycosis barbae, pustulous acne, and multiple boils, the drug had no effect. When the infection, however, was a localized one, as in carbuncles, solitary boils, furuncles of the nose or of the external auditory meatus, styes, or whitlows, the results were often astonishingly good. Provided that the drug was given early, before necrosis had occurred, it was surprising to see how quickly resolution took place. Boils, furuncles, and whitlows generally healed in about three days, and carbuncles in about seven to ten days. Where some days had elapsed before treatment was started, the lesions invariably ran their natural course.

The results were particularly gratifying in infections of the upper lip; in the few cases in this series it was remarkable to observe the rapidity with which pain and swelling disappeared, and to note the almost imperceptible scar that was left. Equally good results, even in diabetic patients, were obtained in boils and carbuncles of other parts of the body. Furuncles were quickly aborted, and subcutaneous abscesses, after incision, healed more quickly. Three patients were treated for chronic whitlows—pain, tenderness, and slight redness and swelling having existed for some three to four weeks—and all cleared up in a few days on sulphanilamide.

The dosage generally used was 1.5 to 2.0 grammes daily by mouth in tablet form. If an improvement was not manifest within a day or two, no benefit was seen to result from larger or long-continued doses. Cyanosis was not observed, but other of the well-known toxic symptoms were occasionally complained of; these were intense weakness, palpitation, diarrhoea or constipation, and were sometimes severe enough to make it necessary to stop the administration of the drug. The table above sets out the results in a first series of cases. They are described as good when resolution was more rapid than previous experience would have led one to expect and when there was less scarring than usual. A second and larger series is being collected, which too, so far, seems to justify the more extended use of sulphanilamide in certain staphylococcal infections of the skin.

Condition	No. of Cases	Results	
		Good	Failed or Doubtful
Boils (including 2 of upper lip)	22	18	4
Bockhart's impetigo	3	0	3
Furuncles (of nose 3; of ear 3)	6	6	0
Styes	6	4	2
Carbuncles (upper lip 1; neck 3; thigh 1; chin 1)	6	5	1
Whitlows (acute 3; chronic 3)	6	6	0
Infections of hand and foot	4	2	2
Subcutaneous abscesses	3	3	0
Abscess of breast	2	0	2
Sycosis barbae	3	0	3
Acne pustulosa	1	0	1
Total	62	44	18

Some of the patients in this series were treated with Messrs. Bayer's brand of sulphanilamide—prontosil album—for a generous trial supply of which I should like to express my thanks. The rest were given sulphanilamide made by other well-known firms.

—I am, etc.,

London, E.1, June 27. M. MARCUS.

The Origin of Cancer

SIR,—In a letter in the *Journal* of June 25 (p. 1394) Surgeon Rear-Admiral Charles M. Beadnell avers that my statement in a previous letter—that conjugation occurs among the cells of malignant growths—requires correction. He goes on to say on the authority of Dr. W. E. Gye that conjugation of cancer cells "is no longer believed in." My authority for stating that conjugation occurs among the cells of malignant growths is the first scientific report of the Cancer Research Fund published in 1904. There, in an unsigned article which I learnt from other sources was the work of Bashford, the following clear description of the observed phenomenon appears. They were studying nuclear changes in young transplanted mouse epithelioma (p. 31):

"In one case, towards the end of the first week, nuclei are found which are drawn out into blunt finger-like processes as if amoeboid (Fig. 31). One of these processes can frequently be seen applied closely to the cell wall which separates the cell from those adjoining. In isolated instances this amoeboid process of the nucleus, filled with condensed chromatin, is seen closely applied to the nucleus of the adjoining cell, and ultimately the two nuclei become continuous through the cell wall (Fig. 32). The process is identical with the process of conjugation in many protozoa and lower plants and probably has the same significance—namely, starting a new cycle. The same phenomena have been observed in a tumour of seven weeks' growth."

He goes on to show convincingly that, though conjugation occurs rarely and is seldom demonstrated, when it is seen it is invariably associated with rapidly growing tumours, and that transplants from such tumours give a very high proportion of rapidly growing daughter tumours in striking contrast to the transplants from tumours where conjugation was not observed.

I do not see how observations so clearly made and described and figured by highly competent observers can be "withdrawn" subsequently, as Rear-Admiral Beadnell says they were. There is no reference to them in subsequent publications of the Cancer Research Fund that I can find. Conjugation once observed cannot be got rid of by "not believing in it." That it has not been seen more often is not remarkable when one considers that a single conjugation provides the reproductive momentum for the growth and all the tissue changes of a lifetime. What other possible explanation can be given for the apparent immortality of a tumour that, transplanted from mouse to mouse, produces a total mass of tissue many thousands of times the bulk of the original mouse on which it grew than the very natural explanation of periodic rejuvenescence by conjugation? *And conjugation has been observed.*—I am, etc.,

Ashton-under-Lyne, June 28. J. V. FIDDIAN.

Cancer and Heredity

SIR,—I would be obliged if you would allow me to correct a slight inaccuracy that occurred in your leading article on heredity and cancer in the *Journal* of June 18.

I have never made the statement that the serum of an animal with a regressing tumour contains antibodies directed against the tumour cells. On the contrary, it was shown that iso-haemagglutinins were formed. The latter finding has been independently confirmed by Lumsden (1938). The conclusion drawn by me was that the dominant genes concerned in the fate of transplants of normal and malignant tissues were precisely those which determined iso-antigenic differences.

At the present juncture two questions concerning the antigenic structure of tumour cells and the antigenic basis of tumour transplantation demand discussion: (1) Are malignant cells antigenically different from the normal cells from which they arise? (2) If such differences exist, do they play a part in transplantation? There is some evidence that the answer to the first question is in the affirmative. For example, it is known that virus-induced tumours in the rabbit or fowl will regress spontaneously (see discussion by Kidd, 1938). Furthermore, it has been shown that the members of a pure line can be immunized against leukaemic cells derived from other members of the line, and the immunity can be passively transferred (MacDowell *et al.*, 1934; Potter *et al.*, 1937–8). However, the balance of evidence does not indicate that these differences play any part in transplantation as ordinarily carried out. For reasons that were suggested in a previous communication (Gorer, 1937), and that have been considerably amplified in a paper recently sent to press, it would appear that the fate of transplanted tissues (normal and neoplastic) is determined to a very large extent by iso-antigenic reactions.—I am, etc.,

Lister Institute of Preventive Medicine, June 24. P. A. GORER.

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*** In an attempt to compress in a relatively short space a number of observations on the problem of cancer and heredity in the leading article which appeared on June 18 we misquoted Dr. Gorer, and apologize for doing so.—ED., *B.M.J.*

Treatment of Apoplexy

SIR,—The treatment of apoplexy by infiltration of the stellate ganglion, described in the *Journal* of July 2 by Mr. W. A. Mackey and Dr. L. D. W. Scott, lends support to the theory that cerebral haemorrhage is an active rather than a passive process. The passive theory is that haemorrhage results either from weakening of the vessel wall by sclerosis or aneurysm or from a sudden catastrophic rise in blood pressure, such as might be supposed to occur in straining at stool; or from a combination of the two.

The active theory is that cerebral haemorrhage is the result of a temporary local flushing of the arterioles of the brain. I venture to put forward the following suggestions in favour of the latter view:

1. Massive cerebral haemorrhage is seldom a single lesion; around the main mass is an area of smaller petechial spots in the brain substance. These may not be noticed if the brain is cut up at once, and it ought to be a rule always to harden it in formalin first. If this is done the petechiae are easily seen.

2. High blood pressure alone is not sufficient to rupture the cerebral vessels. Fishberg found that 1,520 mm. of mercury ruptured the cerebral vessels in only two out of thirty cadavers.

3. There is a clinical association between severe spontaneous epistaxis and cerebral haemorrhage. I cannot give figures, but I have often noticed that patients (particularly elderly women) to whom I have been called on account of bleeding from the nose subsequently die of apoplexy. In epistaxis one sees a pulsating vessel surrounded by an area of red, oozing mucous membrane. Application of the electric cautery checks the main flow and blanches the reddened area as well: it is not necessary to touch the bleeding point; merely to stroke the affected area is sufficient in most cases, suggesting that the action of the cautery is reflex rather than the direct sealing of the vessel.

4. Dramatic results in apoplexy have been reported both from venesection and from lumbar puncture—operations which must surely have a diametrically opposite effect on the intracranial pressure. I suggest that both of these, in so far as they act at all (and my own experience has not been happy in this respect), do so in a reflex manner. Infiltration of the stellate ganglion is also an indirect method, but I note that Mr. Mackey and Dr. Scott envisage an area of ischaemia around the haemorrhage, and not an area of flushing.

5. Sudden death at stool; in my experience one sees a loose evacuation and not such as would require straining. I believe that the call to stool in these cases is a symptom of the cerebral lesion, and not its cause. In one of my cases sudden and severe headache was followed by call to stool and a watery evacuation: the patient quickly lapsed into unconsciousness and died of a cerebral haemorrhage.

If cerebral haemorrhage is held to be an active process it certainly suggests that indirect attacks, aiming at altering the condition of the blood vessels in the vicinity of the lesion, offer the best hope of success.—I am, etc.,

Norwich, July 3. FREWEN MOOR.

Voluntary Hospitals' Emergency Bed Service

SIR,—I should like to express through your columns my appreciation of the recently inaugurated emergency bed service, which I have found most useful in getting urgent cases into hospital.

This organization is a great time-saver for the busy practitioner, and I feel sure that there will be plenty of demand for its services as soon as the advantages are realized. Up to the present, however, I understand that there has been only a fraction of the inquiries that were catered for as regards office staff, etc. It suggests that the majority of London doctors are doubtful of the value of the new system, or are so used to their former methods that they are loath to change. It seems apparent that this valuable scheme for co-ordinating hospital services, sponsored as it is by the British Medical Association, and financially supported by King Edward's Hospital Fund, deserves general support and encouragement.—I am, etc.,

London, N.4, June 28. A. R. MONTGOMERY.

The Unconscious Mind and Medical Practice

SIR,—One of the difficulties I have always experienced in connexion with the unconscious of the psychoanalysts is that they give no precise definition of the term. I am reminded of this difficulty by the following passage occurring, quite early, in Dr. Ernest Jones's paper in the *Journal* of June 25 (p. 1354). "The apprehending of outer reality is for long preceded by a period in which the mind is ruled by fantasy, and fantasy

of such a grotesque and exaggerated nature as to seem quite incredible to our conscious mind. This is one feature of the unconscious. . . ." But surely fantasy implies consciousness: rob it of all consciousness and what remains?

I do not desire to initiate a controversy on this subject, but I feel that we need a precise definition of the term "unconscious" as here employed.—I am, etc.,

London, W.1, June 28. HARRY CAMPBELL.

Ischio-pubic Osteochondritis

SIR,—After a careful perusal of Mr. G. D. F. McFadden's able description of a case which he describes as one of osteochondritis (*Journal*, June 18, p. 1309) I would suggest that it is only fair to your readers to ask him to explain why he considers that such a diagnosis should be made. The diagnosis rests on clinical, pathological, and radiological findings. The clinical history in any case of osteochondritis is at best inconclusive, and that in his reported case is not of help in diagnosis, as both trauma and infection could have originated the condition. His pathological findings are not of any great assistance, but rather point to a blood-borne infection. The radiological findings, in the light of reproduction in the Journal, do not suggest a condition similar to Perthes' or Osgood-Schlatter's disease, as he thinks probable.

The whole field of osteochondritis has in recent years been reviewed with doubt. The very term "osteochondritis" is a misnomer. The more modern "osteochondropathy" is preferable. Within the last few years Kümmel's disease of the spine has been relegated to its rightful place in the group of post-traumatic conditions, as have Kienböck's disease of the semilunar and Preiser's disease of the carpal scaphoid. A few years ago all were called "osteochondritis." Why then should Mr. McFadden add a doubtful entity to an already dubious classification? I submit that from a perusal of his case-history and an examination of the reproduction of his radiograph no resemblance to Perthes' or Osgood-Schlatter's disease is presented. The condition rather indicates a juxta-epiphyseal lesion.

I would suggest that the condition he describes is a juxta-epiphysitis, as seen in other general infections, or a metaphyseal "dystrophy" similar to that shown in the rickets group (renal, coeliac, or due to an avitaminosis), and I would ask him to examine his case at a later date, when the synostosis should show the broadening and shortening, seen typically in the femoral neck in Perthes' disease, if osteochondritis is present, or the more normal metaphyseal appearance shown in a well-treated rickets if it is not. I trust that Mr. McFadden will treat this note not as a criticism but as part of an attempt to simplify classification.—I am, etc.,

Liverpool, July 1. G. EDGAR CHURCH.

SIR,—I was much interested in the case reported by Mr. G. D. F. McFadden in the *Journal* of June 18 (p. 1309).

Last month (no doubt while Mr. McFadden's article was in the press) I showed before the Orthopaedic Section of the Royal Society of Medicine some radiographs of the condition, and discussed this rather unusual site for osteochondritis. There was one radiograph of an adult case which revealed bulbous swellings not only at the epiphyses of the descending rami but also two at the middle of the horizontal rami. The appearance strongly suggested symmetrical fracture of this part of the pelvis. There was, however, no history of any injury or disability in youth. I also showed another radiograph of an old reduced congenital dislocation of the hip-joint in a child aged 6.* Here the head of the femur was flattened and distorted, the appearance being similar to that seen in a case of healed Perthes' disease, but on the same side as the hip abnormality there was an osteochondritis at the site of the ischio-pubic epiphysis on the descending ramus. The usual condition, as Mr. McFadden pointed out, is a unilateral ischio-pubic epiphysitis without any other abnormalities.

As regards symptomatology and physical signs, it is rather difficult to interpret such well-marked ones as limp, spasm of muscles, and pain in the hip. Rarely is there much discomfort in Köhler's disease of the tarsal scaphoid, yet the stresses that this bone undergoes in the foot are enormous in comparison with those affecting one of the pubic bones. In discussing the reasons for the occurrence of an osteochondritis of the pubis I showed a slide depicting the way in which ossifying bone growing from the body of the ischium peripherally along both the horizontal and descending pubic rami met, the ossification extending centripetally at the same time from the body of the pubis. At the site of the union of these separate ossifying processes powerful groups of muscles are attached—the rectus abdominis and pectineus on the horizontal ramus, and the adductors of the thigh on the descending ramus. There is also a vascular anastomosis at these sites, with the pubic branch of the deep epigastric artery at the epiphysis of the horizontal ramus, and the obturator artery at the epiphysis of the descending ramus. Possibly an explanation of why the normal union of the ossifying processes at the site of these epiphyses is upset is to be found in some imbalance of these three factors. Certainly it is difficult to see how any other pathological theory, dragging in even sepsis or tuberculosis, can be made to fit. Yet in nearly all textbooks these two factors are put forward after trauma as possible causes of the analogous Perthes' disease, which is an osteochondritis of the epiphysis of the head of the femur.—I am, etc.,

London, W.1, June 27. G. O. TIPPETT.

Anti-venereal Measures

SIR,—Dr. Robert Forgan's letter on this subject in your issue of June 25 (p. 1389) questions the accuracy of the conclusions of the Ministry of Health Commissioners in their recent report on "Anti-venereal Measures in Certain Scandinavian Countries and Holland." In particular the conclusion the accuracy of which Dr. Forgan questions is the following:

"Considering that in the countries employing compulsory treatment and in those which rely on a voluntary system the degree of success in reducing the incidence of syphilis and of relative failure in gonorrhoea are broadly similar, compulsory treatment does not seem to us to be a major factor influencing the results of the anti-venereal measures in the countries where it is employed."

The item which Dr. Forgan stresses most as a reason for questioning the accuracy of the above-quoted conclusion is that, according to him, England and Wales have reduced the cases of syphilis between 1922 and 1936 by less than 30 per cent., whereas Denmark has reduced the cases by 300 per cent. At first this seemed to be a possible misprint, but he repeats these figures again. Here are his two comments on this point:

"According to the Ministry of Health's official figures the number of cases of syphilis fell from 25,000 in 1922 to 18,000 in 1936—a reduction of less than 30 per cent. In Denmark during the same period the figure fell from 2,400 to less than 800—a reduction of over 300 per cent. . . . While one has every respect for the clinical acumen of the personnel of the

Commission, one may be forgiven for questioning the accuracy of conclusions based on the assumption that 30 per cent. and 300 per cent. are even 'broadly' similar."

Dr. Forgan is right in saying that the decline in England and Wales between 1922 and 1936 was "less than 30 per cent."—actually it was 28 per cent.—but the decline in Denmark on the figures he quotes was 66.7 per cent., *not 300 per cent.* Even so, on that basis Denmark certainly achieved better results than England and Wales in that period; but does that prove that our Ministry of Health Commissioners were inaccurate in stating their conclusion that as regards the countries which employ compulsory measures and the countries which employ non-compulsory measures the degree of success in reducing the incidence of syphilis are "broadly similar"? If we compare the cases of acquired syphilis, the rate for new infections in England and Wales in 1936 was 1.40 per 10,000 of the population (Table D, p. 238, Annual Report Chief Medical Officer); in Denmark the rate was 2.1 per 10,000, and in Copenhagen the rate was 5.5 per 10,000 (Table D.1, p. 28, of British Commissioners' Report). Even though this is in our favour, does it prove anything satisfactorily to compare England and Wales with Denmark? The total population of Denmark is 3,723,000, whereas the total population of England and Wales is over 40 million. The population of Copenhagen is 672,000; the population of London is over 8 million. Our vast population is mostly concentrated in great cities, whereas the Danish population is largely rural, yet England and Wales have a rate of 1.40 per 10,000 of fresh infections in 1936, while Copenhagen has 5.5 per 10,000.

Those in favour of Great Britain abandoning non-compulsory measures and imposing compulsory measures may comment on these figures that Denmark notifies all cases and we do not notify, so that our figures are not necessarily accurate. That is true, but if we look at page 23 of the Commissioners' report it is obvious that the cases reported in Denmark each year do not include every case. Dr. Krag of the Danish State Serum Institute had evidence that 1,713 cases of syphilis *in all stages* had been tested *for the first time* in 1936, while the cases actually reported in 1935 and 1936 were respectively 834 and 835.

Dr. Forgan also refers to the much quicker decrease of syphilis (as notified) in Sweden between 1919 and 1935 than in this country, and says that "not even the most ardent supporters of our English come-and-go-as-you-please methods will dare to claim anything comparable for England and Wales." True, they would not, but can he prove with accuracy that the better results in Sweden are due to their compulsory methods? Actually it is impossible to prove anything definitely on this point on the statistics available, but ought we not to realize that there are other factors to consider than the venereal statistics? First, population: Sweden is under 7 million total and we are 40 million. Second, the results of war on our enormous and largely industrialized population. Syphilis rose in Sweden as a result of the war, but it had nothing comparable to our problem to deal with in this respect; it had 5,976 cases in 1919, the peak year for Sweden, whereas we had 42,134 in 1920, which was our peak year. It naturally was more difficult for this country to deal effectively with the post-war health problems than it was for two small and largely rural non-combatant countries such as Denmark and Sweden. There is a third factor—namely, the differing characteristics of nations; it is doubtful if drastic compulsion would be helpful in Great Britain in the matter of venereal disease, and also it might not be applied so equally and democratically between all classes and both sexes as it seems to be in Scandinavia.

In any case the choice before us is to go on continuously improving our national fight against V.D. on voluntary methods or of abandoning our present system and going all out for compulsion. In our view the latter course would do infinite damage, and, moreover, we can see nothing in the statistics of other countries to prove that there is any reason to differ from the Ministry of Health Commissioners' conclusion that "compulsory treatment does not seem to us to be a major factor influencing the results of the anti-venereal measures in the countries where it is employed."—I am, etc.,

ALISON NEILANS,
Secretary, Association for Moral and Social Hygiene.

Livingstone House, Broadway, S.W.1, June 27.

Anatomical Terminology

SIR,—At this time of the year, when professional examinations are rife, the topic of anatomical terminology suggests itself. The summer examinations of the Chartered Society of Massage and Medical Gymnastics have finished. Students have been taught the oldest possible terminology and have been told to buy old editions of anatomy books. The second M.B. examinations at Oxford and Cambridge have been conducted in the Basle *Nomina Anatomica*, and the second M.B., Part II, will take place in London this week, conducted in the British revised terminology. The Conjoint Board examinations in anatomy are also in progress, and the final Conjoint examinations are listed for next week. The utter confusion into which academic anatomists have thrown their own subject is now proving to be a serious obstacle to the mutual understanding and the education of members of the medical, massage, and nursing professions.

It seems quite clear that the matter of uniformity lies in the hands of the examiners of these three professions, and it is incredible that some are examining for more than one board and tolerating the teaching of more than one terminology. So far as the medical students are concerned, in London at any rate the "British Revised" is being taught in the anatomy schools; the provincial universities vary. The clinical teachers are inconsistent; registrars have a knowledge of all three—the Victorian, the B.N.A., and the British Revised—and they teach a triple confusion partly for the students' sake and partly to escape the wrath of the older teachers, who love the more romantic names. The student of to-day has to learn all three terms for any structure in order to protect himself so far as is possible from being dubbed a dunderhead by his learned clinical chief.

A complete ignorance even of the B.N.A. predominates in the massage and nursing professions, so that the confusion is increasing as the students of the last decade qualify. One often hears complaints that the average doctor knows nothing of modern physiotherapy, and efforts are constantly being made to secure a greater co-operation between doctors and physiotherapists, but one difficulty is the language bar. Must we teach the "nerve to the serratus lateralis" (pre-war serratus magnus) as the "long thoracic nerve" *and* the "respiratory nerve of Bell"? Will the sister in the aural department appreciate a request for a pharyngotympanic catheter?

The massage and nursing professions could be modernized at once in their teaching. The medical profession itself may require more self-sacrifice from the die-hard clinicians than they are likely to give, but the examiners have the key to the solution. If men at all stages of

the profession were introduced to three or four new terms weekly in the *Journal* the more important items would soon be covered, but the terms would have to be in bold type. I understand that the whole question of the teaching of anatomy to nurses is at present under survey by the General Nursing Council. Perhaps the council will find it possible to state a policy on terminology. It may be an anatomical Utopia that I am suggesting, but it affects us all. It will mean that even the physicians with have to talk of atrial flutter.—I am, etc.,

D. F. ELLISON NASH, F.R.C.S.

St. Bartholomew's Hospital, June 30.

Tuberculin in Diagnosis

SIR,—I am sorry to see that Dr. J. R. Forbes (*Journal*, June 25, p. 1389) has been unable to find in my paper, to which he refers, any evidence of the diagnostic value of the subcutaneous tuberculin test. Skin tuberculin tests show that in the British Isles the great majority of the adult population has been infected with tubercle; but only a small minority of the infected require treatment for tuberculosis. It is as an aid in determining whether in a particular case, with symptoms and/or signs suggestive of pulmonary tuberculosis, treatment is required that I find the subcutaneous tuberculin test of great value. Of course all tuberculin-positive cases require treatment, but so also do many tuberculin-negative cases.

Speaking of the intracutaneous test, Dr. L. S. T. Burrell (*Recent Advances in Pulmonary Tuberculosis*, 1929, p. 26) says: "A negative tuberculin test is by no means uncommon, and is of the greatest importance in diagnosis. A positive test is of less value in diagnosis, as it indicates infection only." Now the subcutaneous test gives a much larger proportion of negative results than does the intracutaneous test; and is on that account more useful, if one may safely eliminate all the doubtful cases that do not react to this test. The facts stated in my paper, published in October, 1932, which have a bearing on this and on the need for treatment of the otherwise doubtful cases that do react are as follows:

"From January, 1913, to March, 1932, I have used the subcutaneous test in 798 doubtful cases. In 344 of these there was no reaction, and the patients were assured that they were not suffering from tuberculosis. This does not mean that they were immune to tuberculosis for life. Of 344 non-reactors, five did suffer later from pulmonary tuberculosis with positive sputum. The 454 patients who reacted to the test doses were advised to take the matter seriously, and have either sanatorium or tuberculin treatment, and most of them did so. From 1913 to 1922, inclusive, there were 165 reactors, of whom 130 got at least three months' treatment at a sanatorium or with tuberculin, and 35 got neither. In March, 1932, the condition of these was as follows:

	Total	At work	Unfit	Dead
Treated at sanatorium or with tuberculin	130	87 (66.9%)	6 (4.6)%	37 (28.5%)
Treated otherwise, or untreated ..	35	15 (42.9%)	2 (5.7%)	18 (51.4%)

As the average time that these cases were under observation was fourteen and a quarter years, the deaths among those treated at a sanatorium or with tuberculin were not much in excess of those of the general population, the deaths among the others being much greater."

I leave it to readers to judge whether Dr. Forbes is justified in dismissing these figures as "no evidence."—I am, etc.,

JOHN R. GILLESPIE.

Belfast, June 28.

*** This correspondence is now closed.—ED., *B.M.J.*

Medical Relief for China

SIR,—Nine weeks ago you were good enough to publish a letter from us asking the profession in this country to help in the provision of medical supplies for relief work in China. The response was so gratifying (£100 having been received) that we composed a second letter, more detailed than the first, intending to ask you to publish it as the basis for a wider appeal. However, at this juncture we were delighted to find in your issue of June 18 (p. 1339) a letter, signed by some of the most eminent members of our profession, describing with simple eloquence the heart-breaking conditions in the war-stricken parts of China, and asking for donations to be sent to the Lord Mayor's Fund for the Relief of Distress in China, 121, Westbourne Terrace, London, W.2.

We feel that since this matter is now in such competent hands there is no need for our second letter to appear. We have decided to hand over the sum of £100 to the Lord Mayor's Fund, on the understanding that it is administered entirely in favour of the Hong Kong Division of the Chinese Red Cross Society, to help which our appeal was specifically made.

A number of our colleagues have given generously; we thank them whole-heartedly. Others have not yet responded; for them we feel bound to reiterate the urgency of the need, and to commend to their notice the letter signed by some of our most distinguished brethren.—We are, etc.,

MILLAIS CULPIN.
W. C. W. NIXON.
H. J. SEDDON.

July 2.

Schopenhauer and Syphilis

SIR,—The statement made in the *Journal* of July 2 (p. 22) that Schopenhauer contracted syphilis and that this disease accounted for his pessimism rests on a somewhat slender foundation. This accusation was first made by Iwan Bloch, the well-known syphilologist and medical historian, in a paper read before the Berlin Society for the History of Medicine and Natural Sciences (*Münch. med. Wschr.*, 1906, **53**, 1374) mainly on the ground that some posthumous papers showed that in 1823 Schopenhauer was undergoing mercurial treatment—both internally and by inunction—associated with tincture of guaiacum, which in those days was in vogue as an antisyphilitic drug. The sensual propensities of the philosopher made it seem highly probable to Bloch that he was often exposed to infection and that syphilis was the chief cause of his pessimism. Professor Wilhelm Ebstein, however, whose work on Schopenhauer I reviewed many years ago (*Rev. Neurol. Psychiat.*, 1907, **5**, 660), disposed of this argument by showing that Schopenhauer had been a pessimist from his youth onwards. Another objection to Bloch's theory was that brought forward by J. Wolf (*Münch. med Wschr.*, 1906, **53**, 1818) to the effect that the first volume of Schopenhauer's chief work, *Die Welt als Wille und Vorstellung*, was published in 1818. This fact excluded the possibility of a disease contracted five years later having had any influence on the development of Schopenhauer's philosophy. Moreover, Ebstein points out that mercury, both internally and by inunction, together with tincture of guaiacum, was strongly recommended by Rust, a celebrated medical contemporary of Schopenhauer's, as a remedy for joint affections, from which Schopenhauer suffered. Similar charges of syphilis, based on inadequate grounds, have been brought against Voltaire and Goethe, as I have shown elsewhere.—I am, etc.,

J. D. ROLLESTON.

London, July 2.

The Psychology of the Medical Profession

SIR,—May I be allowed to thank Dr. N. Howard Jones for his useful contribution (*Journal*, June 25, p. 1391) to the problem which I raised in your issue of June 6. He appears to say, in effect, that the therapy advocated by the industrial chemical firms is more truly scientific, and therefore more commendable, than the treatment by stock mixture so much in favour with the average practitioner. Assuming then (1) that scientific treatment of disease consists essentially in the administration of chemical or biochemical specifics, and (2) that the average practising doctor is eminently suggestible, I again ask: Why should medical students have to study for five or six years at expensive training institutions when all the information really necessary for their practices could easily be purveyed to them by, say, a weekly "news sheet" issued by the reputable drug firms?—I am, etc.,

North Queensferry, Fife, July 3. A. J. BROCK.

*** This correspondence is now closed.—ED., *B.M.J.*

Assistance to Medical Students from Austria

SIR,—The embittered protest of Dr. Vincent Norman (June 25, p. 1394) on the subject of assistance to medical students from Austria is perhaps not so surprising in an age when the teachings of Christ appear to be but a non-Aryan delusion: but, as one who frequently comes in touch with some of the refugees, I would like to assure Dr. Norman that he need not worry his head over the possible likelihood of enforced sacrifices on the part of himself or of his colleagues, for nothing of a substantial nature has been done by anyone to help these wretched people and, indeed, there is no reason to suppose that they ever will. The "political ramp" to which Dr. Norman so dramatically refers is certainly mythical so far as the refugees are concerned, and one can only suppose that your correspondent has culled his information from a certain section of the sensational press.—I am, etc., VICTOR CONSTAD.

London, S.W.3, June 27.

Medico-Legal

CHARGE OF PROCURING ABORTION

Mr. Aleck Bourne at Marylebone Police Court

At Marylebone police court on July 1, before Mr. Ivan E. Snell, Mr. Aleck W. Bourne, obstetric surgeon to St. Mary's Hospital, London, and consulting obstetric surgeon to Queen Charlotte's, was summoned by the police on the charge of unlawfully using an instrument with intent to procure abortion. Mr. Bourne's defence was undertaken by the London and Counties Medical Protection Society, and Mr. G. A. Thesiger, counsel, appeared on his behalf. The Director of Public Prosecutions was represented by Mr. H. A. K. Morgan, counsel.

The Charge

Mr. Morgan said that this was a case of unusual character in that the defendant, a surgeon very highly regarded in his profession, had deliberately and openly defied the law for reasons which he thought good and sufficient. On June 14 at St. Mary's Hospital he procured the miscarriage of a woman by the unlawful use of an instrument. The law of this country did not specifically recognize any interference with pregnancy as justifiable. Such interference appeared to be permissible on two grounds only—first, to save the life of the mother, and, secondly, to save the life of the child. It was not to be done for the sake of family honour or other ethical reasons. The defendant, among other medical men and others, held the view that the present law ought to be altered or at any rate relaxed, and in order to ventilate this opinion he had openly defied the law and had committed a crime for which the maximum penalty prescribed in the statute was penal servitude for life. He had been exceptionally fortunate in being able to find what from his point of view was an absolutely perfect case. The girl was under 15 years of age and was pregnant through no fault of her own. This was not the case of a loose woman who had got into the "family way" through carelessness, or of a married woman who did not want a child because it would be inconvenient. It was not his business as counsel to discuss the arguments for or against abortion, but merely on behalf of the Director of Prosecutions to ask that the case be sent for trial.

The facts were undisputed. On April 27 this girl, then 14 years and 9 months of age, was raped in a building near Whitehall. The case had aroused great interest, and her assailants had received long terms of imprisonment by sentence of the Central Criminal Court. Following the rape the girl missed one of her periods and was taken to see Dr. Joan Malleson, who was a member of the medico-legal council of the Abortion Law Reform Association. Having seen the girl and heard the circumstances of her case, she wrote to Mr. Bourne, who was a member of the same council, and he replied, "I shall be delighted to take her in at St. Mary's and curette her. I have done that before and shall have not the slightest hesitation in doing it again. I have said that the next time I have the opportunity I will write to the Attorney-General and invite him to take action." On May 31 the girl was taken by her mother to see Mr. Bourne, a letter of consent to the operation was obtained from the girl's father, and afterwards Mr. Bourne saw Dr. Wingate, then resident obstetric officer at St. Mary's, told him about the case, and gave him his reasons for doing what he was about to do—namely, that the girl was under the age of consent and had been raped. On June 6 she was admitted to St. Mary's. She underwent the Aschheim test for pregnancy, which was positive, and on June 14 Mr. Bourne emptied her uterus. On the same day, in an interview with Chief Inspector Bridger at the hospital, Mr. Bourne related the facts and said, "I want you to arrest me." The inspector said that he would report the matter to the proper authorities. The only defence up to now which Dr. Bourne had put in was that in his opinion as an obstetric surgeon it would be dangerous for a girl of her age to bear a full-term child. He did not think Mr. Bourne put that forward seriously as a real defence. As the law now stood, if it were a defence, then it might be held dangerous for any woman to go to term and the law of abortion would be a dead letter.

Evidence

The girl, whose name was suppressed, then gave evidence. Mr. Morgan gave a guarantee on behalf of the Director that no proceedings against her would be brought as a result of her evidence, and therefore she was not cautioned. Her father, however, who was the next witness, was told by the magistrate that there was a possibility—although almost negligible—that in answering certain questions he might lay himself open to a charge, and therefore he was not compelled to answer those questions. He stated that on May 31 he wrote to Mr. Bourne giving his consent to the operation, but he had asked that no publicity of any sort should be given to the case, and Mr. Bourne had replied, "I note what you say about secrecy, and I can assure you that there will be no effort spared to keep the matter secret." His reason for desiring secrecy was lest the

girl should be prejudiced in business life, and also to save his wife worry.

Dr. Joan Graeme Malleson testified that she knew the defendant in a professional capacity and had consulted him on gynaecological cases. The girl was brought to her consulting-room on May 21, and she wrote to Mr. Bourne explaining that the girl was only 14 and was pregnant as the result of rape. She had a reply from him on May 27, and in a further letter dated June 2 he said that he had been requested by the parents to keep it secret and under the circumstances must do as they wished. Later he asked whether she could do anything to persuade the father to revise his decision as to publicity. In reply to further questions Dr. Malleson said that she was at one time medical officer in charge of the Ealing Borough Council's birth control clinic, and was now in charge of the clinic for difficulties of marital adjustment at the North Kensington women's welfare centre. The girl was brought to her by a lady organizer of a school care committee.

Dr. P. C. F. Wingate, who was also cautioned, said that he was lately resident obstetric officer at St. Mary's. Before the girl was admitted he had a conversation with Mr. Bourne, and was told that his object was to terminate the pregnancy, the girl being under age and pregnant as a result of rape. The test for pregnancy was made and found positive, the test for gonorrhoea was negative. He was present on June 14 when the defendant used a curette and emptied the uterus. The girl was discharged from hospital on June 25. Cross-examined, he said that the girl was competently attended by qualified doctors and nurses before, during, and after the operation, and the operation took place under proper antiseptic conditions.

Chief Inspector Bridger of Scotland Yard testified to his conversations with Mr. Bourne, who wanted him to arrest him. When the summons was served on June 27 he said, "Right." In reply to Mr. Thesiger, he knew that the defendant had the highest possible qualifications as a surgeon.

The Defence

Mr. Thesiger said that so far as the facts were concerned he would advise the defendant to plead "Not guilty" and reserve his defence. If the magistrate were of opinion that in its legal bearings the case required further investigation, he desired to make a few remarks on the law as it stood. Owing to the recent reform in legal procedure there was no longer the possibility of a grand jury considering a matter of this kind. In certain actions in the South-Eastern circuit, recorded in Denman's *Digest*—cases of a rather different kind from the present—the grand jury exercised discretion and the cases did not go to trial. There was now no grand jury, and the responsibility as regards presenting for trial was wholly on the magistrate.

His submission was that on a proper view of the law there was no evidence here that the defendant was guilty of a felony or liable to punishment. This child, under 15 years of age, was seized and held down by one man while another had sexual intercourse with her. It was described by the judge the other day as a most horrible case. On the facts now again presented no doubt the magistrate would be of the same opinion. Pregnancy followed, and with the consent of the girl and her parents, under conditions as safe as could be imagined, the operation being performed by a man of the highest qualifications, the pregnancy was artificially terminated. The prosecution now suggested that the surgeon himself was guilty of felony, and that the child, her father, the house-surgeon, probably also Dr. Malleson and the lady organizer of the school care committee were aiding and abetting the felony. Whatever some people might think, the law was not so crazy as to lead to that conclusion. He drew attention to the section (58) of the Offences against the Person Act, 1861, under which this summons was taken out. It could be construed in a perfectly reasonable manner. It read:

". . . and whosoever, with intent to procure the miscarriage of any woman, whether she be or be not with child, shall unlawfully administer to her or cause to be taken by her any poison or other noxious thing or shall unlawfully use any instrument or other means whatsoever with the like intent, shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for life. . . ."

The word "unlawfully" appeared four times in that section. It was perfectly clear from that emphasis that the law intended that in certain circumstances the use of instruments for the purpose set out should not be unlawful, otherwise the insertion of the word "unlawfully" was wholly unnecessary. Parliament, possibly with great sense, had left it to the generations that came after 1861 to find from time to time what should be the law.

It was important to bear in mind that the child was under 16. Sexual intercourse with a child under 16 had been *prima facie* a criminal offence for many years prior to 1929 unless the child happened to be married, but in 1929 the Age of Marriage Act was passed, whereby marriages of persons under 16 were made void, so that it was now under all circumstances unlawful and in practically all circumstances criminal to have sexual intercourse with a child under 16. In other words, a child under 16 was not to be put in the "family way," even in the case of marriage, and that applied, of course, whether she consented or not. In this particular case the child did not consent. The act took place against her will and by force. It was a trespass committed upon her. In these circumstances it could not be said to be unlawful to avert the consequences of a felonious trespass on a child below the age of consent and below the age of marriage. What Mr. Bourne did, on a reasonable construction of the Act, could not be regarded as unlawful. It was, moreover, done in circumstances in which bodily harm was not likely to occur, whereas had she gone through a long period of pregnancy, and produced the child of the man who had violated her, the consequences might have been very serious. Unless, therefore, the magistrate was of opinion that the matter required further legal investigation with a view to establishing the position finally, he asked that the defendant should not be sent for trial and that the case should be dismissed.

On one matter of fact it was necessary to say a word. The father of the girl, naturally, was anxious that the matter should not be discussed more than was absolutely necessary. It was clearly for that reason alone that Mr. Bourne did not communicate with the authorities. He did what he thought to be right, and did it openly, and was perfectly prepared, and indeed anxious, to let the authorities know about it.

The Magistrate's Decision

Mr. Snell overruled Mr. Thesiger's submission, and said that in his view the matter was one which should go before a judge and jury of the High Court. That was probably also the wish of the defendant and his advisers. He gathered that the facts would not be in dispute. The jury would, as directed by the judge, examine the facts and the attendant circumstances, and say, no doubt, whether in this particular set of circumstances what had been done was "unlawful" according to the Act. That was the best way of dealing with the matter; a *prima facie* case had been made out. He did not think it was competent for him to give a decision; that was for a jury.

Mr. Bourne, asked if he wished to say anything, simply made a plea of "Not guilty." He was committed to take his trial at the Central Criminal Court, and bail was granted in his own recognizance of £100.

Obituary

SIR COLIN MACKENZIE, M.D., F.R.C.S.ED.,

Lately Director of the Australian Institute of Anatomy

News has been received in this country of the death of Sir Colin Mackenzie, who resigned the post of Director of the Australian Institute of Anatomy, Canberra, at the close of last year on account of ill-health. This Institute, which will always be associated with his name, was built to house the collection of scientific specimens presented by him to the Commonwealth. Five years ago the Royal Society of Australia was founded, with headquarters in the national Capital and branches in the various States, for the purpose of advancing the interests of science in general within the Commonwealth of Australia, and Sir Colin Mackenzie was elected first President.

William Colin Mackenzie, eldest son of John Mackenzie, was born at Kilmore, Victoria, on March 9, 1877, and was educated at the Scotch College and University at Melbourne. After graduating in medicine he became lecturer and examiner in anatomy at Melbourne University and began the researches on the comparative anatomy of the Australian fauna which he later described in four volumes. He was also for some time lecturer in applied anatomy at the University of Adelaide. In the later years of the war he came to this country and was given a post at the Military Orthopaedic Hospital, Shepherd's Bush, London. As a result of long pondering on limb and body movement he realized that the rational methods of treatment which benefited the subjects of infantile paralysis were equally effective in the treatment of men disabled in the war. His teaching and experience in this field were embodied in an important book, *The Action of Muscles, including Muscle Rest and Re-education,* published in 1918, and reviewed in these columns by Sir Arthur Keith.

Mackenzie had been President of the Royal Zoological Society of Victoria, and at the first Australasian Medical Congress of the British Medical Association held in Melbourne at the end of 1923 he demonstrated the comparative anatomy of the brain, with special reference to Australian fauna. In 1928 he delivered the Bancroft Lecture and presided over the Zoological Section of the Australian Science Congress. He received the honour of knighthood in the following year. He had been a member of the Council of the Anatomical Society of Great Britain and Ireland, and was for more than thirty years a member of the British Medical Association. His book on *Intellectual Development and the Erect Posture* was published in 1924.

HUGH WOODS, M.D.

Late General Secretary, London and Counties Medical Protection Society

Dr. Hugh Woods, who died on July 3, was born on March 21, 1859. He was the second son of the Rev. R. M. Woods of Whittington, Oswestry. His father educated him until he went to Trinity College, Dublin. At the age of 14 he suffered from osteomyelitis of the lower limb which caused permanent rigidity of the ankle. At Dublin he obtained the following degrees and diplomas: B.A., 1883; M.B., B.Ch., and M.D., 1886; M.A.O., 1887; D.P.H., R.C.P.S.I., 1902; L.M. (special certificate in gynaecology), Rotunda Hospital, 1886. He had been a senior moderator in experimental science and medical scholar of Trinity College and a member of the Senate of Dublin University. At one time he was also the secretary of the Association of Science.

Dr. Woods had a varied and distinguished career and was a successful general practitioner in London for many years, and from 1890 to 1892 he was a member of the Council of the Medical Defence Union. He took a prominent part in the formation of the London and Counties Medical Protection Society, and was one of the original members of Council of the society at the date of its registration, March 31, 1892. From 1892 to 1902 he was honorary secretary of the society, and from 1902 until 1932, when he retired, he was general secretary, and devoted his whole energy to the society which now stands as a living testimony to his efforts.

It must not be thought that medical politics was the sole resort of his mind; indeed he had a place of honour in science, as his university career would indicate, and wrote several technical and much-respected books, of which perhaps the most noteworthy was *Aether; its Nature and Place in the Universe.* An outstanding trait in his character was the unremitting determination with which he would fight any good cause that concerned his profession. He was particularly keen in a war he waged against unqualified persons who purported to be medically qualified. That he was feared and respected by his enemy is demonstrated by the fact that on more than one occasion his life was threatened by such persons. Those who had the privilege of seeking his advice or assistance found him a kindly, courteous, and extremely practical man. No one could be in his presence for more than a few minutes and fail to realize that any matter they left in his hands would be capably and conscientiously dealt with.

Since his retirement as secretary of the London and Counties Medical Protection Society Dr. Woods has continued to serve on the Council as a vice-president, and the society will greatly miss his good sense and unfailing good judgment. He was a member of the British Medical Association for over fifty years, and acted as secretary of the Section of Ethics at the Annual Meeting of 1895. He leaves a widow, three sons, and a daughter.

Dr. C. O. Hawthorne writes:

The record of the services rendered to the medical profession by Hugh Woods is mainly to be read in the official history of the London and Counties Medical Protection Society. For him the society was for many years a chief care and ambition, and he allowed no competing interest to displace it. Fortunately he was well equipped personally for the work he had chosen. Amidst disputes and dissensions he cultivated the equal mind and applied with skill and discretion the art and faculty of an experienced counsellor. When, as usually happened, he held a decided view, he did not hesitate to express it, and this in terms free from ambiguity. Experience had furnished him with unnumbered precedents, and these were applied with skill, discretion, and tact to the immediate situation. Here indeed was the basis of his success and the explanation of the wide confidence which he commanded. Colleagues in difficult situations were his special study, and though he cultivated the reconciling word he had some love of combat when the occasion offered. Not perhaps eminent in all the social virtues, he was to those of us who knew him well a loyal friend with wide interests, a capacity for good talk, and a fine sense of comradeship. In his special sphere he served well his day and generation, and many colleagues were his debtors in days and occasions of anxiety. They will recall his memory with gratitude and good will.

GEORGES MARINESCO

Professor Georges Marinesco, the eminent Rumanian neurologist, known in his own country as Georghie Marinescu, of whose death a short notice appeared in the *Journal* of June 4 (p. 1240), was born at Bucarest on February 23, 1863. He received his medical education at the Brancovan Hospital, and then became assistant to Viktor Babes, the professor of pathology and bacteriology, with whom he collaborated in the publication of articles on transverse myelitis, hysterical mutism, and dilatation of the pupils in pneumonia. At Babes's suggestion he was sent by the Rumanian Government to Paris in 1889, where he studied under Charcot at La Salpêtrière and became assistant to Pierre Marie, with whom he collaborated on acromegaly. After visiting various European countries he returned to Bucarest, where in 1897 he was appointed professor of neurology in the medical faculty and head of the department for nervous diseases at the Pantelimon Hospital. In addition to a monograph entitled *La Cellule*, published in 1909 with a preface by Ramon y Cajal, and articles in Gilbert and Ballet's *System of Medicine*, on diseases of muscles (1910), and that of Roger, Widal, and Teissier, on trophic disorders and chronic rheumatism (1927), he was a prolific contributor to periodic literature on the finer structure of the nervous system, nerve regeneration, painful neuromata in amputation stumps, salvarsan treatment of syphilis of the nervous system, and many other neurological subjects. Like his colleague the late Professor Cantacuzène, to whose memorial volume he contributed an article on rejuvenation, Marinesco was an excellent example of the saying that every man has two countries, his own and France. In recognition of his contributions to French medicine he was elected a member of the Académie de Médecine and of the Société Médicale des Hôpitaux de Paris. Marinesco had also many friends in this country, where he was elected a corresponding member of the Section of Neurology of the Royal Society of Medicine in 1935 and Honorary Fellow of the Society in 1936. He worked with Mott in the laboratories at Claybury Asylum and the Maudsley Hospital, and in 1918 published an article in the Local Government Board Reports (N.S. 121) on the pathological histology of encephalitis lethargica. The high esteem in which he was held in his own country was shown by the fact that not only was he made professor of neurology for life, but also had dedicated to him by the Rumanian Society of Neurology, Psychiatry, and Endocrinology on the occasion of his seventieth birthday in 1933 a jubilee volume with a preface by Ramon y Cajal, to which contributions had been made by the principal neurologists of Europe. Marinesco remained active until the end, his death taking place on May 14 within a fortnight after delivering an address on the life and work of Babes on the occasion of the celebration of the fiftieth anniversary of the opening of the first Pasteur Institute in Rumania by his old master.

Dr. JOHN WATTERSON MILLER, who died at Llandrindod Wells on June 19, took his M.B., Ch.B. degrees in 1899, his M.D.Vict. in 1903, and his M.D.Liverpool in 1904, having obtained the Cambridge D.P.H. in 1901. He also qualified as a barrister-at-law (Middle Temple) in 1915 and was the Junior Lyon Jones Scholar. During the earlier part of his career he served as plague medical officer for the Punjab Government and subsequently entered the public health services at home, first in the West Riding of Yorkshire, later becoming M.O.H. of Blackburn, of the City of Hereford, and in 1921 of Radnorshire. Dr. F. A. Anderson writes: The death of Dr. J. W. Miller at the age of 62 came as a great shock to many of us who remember him so recently as an active member of the Shropshire and Mid-Wales Branch of the British Medical Association. As medical officer of health for Radnorshire and school medical officer he devoted himself with untiring energy to the public health services of the county, and at the time of his death was engaged on the development of the new service under the Midwives Act. He was a keen and active member of the B.M.A., and was elected to the presidency of the Shropshire and Mid-Wales Branch in 1935. He was also a member of the Royal Sanitary Institute and a Fellow of the Society of Medical Officers of Health, serving as President of the Welsh Branch in 1933–4. Among his many interests were included the British Legion and the Boy Scout Association, to both of which he rendered valuable service. Dr. Miller was a man of great ability, undoubtedly well fitted for the executive work to which he devoted his life, and an excellent committeeman and chairman; indeed he was singled out for these positions in every movement with which he was associated. To his widow and daughter will go out the heartfelt sympathy of a large circle of colleagues and friends.

Dr. EVAN WILLIAMS GRIFFITH, who died at his residence in Bath on June 4 after a long illness, had been a member of the Bath Division of the British Medical Association since 1922. He received his medical education at Cardiff and University College Hospital, obtaining the diplomas M.R.C.S., L.R.C.P. in 1914. He served through the war in the R.A.M.C.(T.) with the rank of captain. He had been house-surgeon at the Bristol General Hospital. Dr. Griffith's later appointments included those of surgeon to the Western Dispensary and anaesthetist to the Eye, Nose and Throat Hospital at Bath. He was also for some time assistant medical officer to the Monmouthshire County Council and assistant school medical officer for Newport. In his youth he had been a keen athlete, playing Rugby football for Christ's College, Brecon, and winning many sports prizes, including the Victor Ludorum silver medal. After the war he was to some extent incapacitated by illness, but he retained his athletic interests, and was a member of the Bath Rugby Football Club as well as a vice-president of the Lansdown Cricket Club. He was very popular with his colleagues and a large circle of patients, many of whom attended his funeral at Westbury-on-Trym Parish Church on June 8.

Medical Notes in Parliament

The Mental Deficiency Bill and the Registration of Stillbirths (Scotland) Bill were among the measures set down for consideration in the House of Lords this week.

The British Museum Bill was read a first time in the House of Lords on June 30. Its purpose is to enable the Trustees of the British Museum to accept, under the will of the late Lord Rothschild, the museum at Tring and to administer as part of the Natural History Department the collections assembled there by him.

On July 5 a return relative to experiments on living animals was presented to the House of Commons. On the same day there were laid on the Table regulations under the Factories Act including the Night Work for Young Persons (Medical Examination) Regulations and the Protection of Eyes Regulations.

The Parliamentary Medical Committee met at the House of Commons on July 5, Sir Francis Fremantle presiding, and considered a suggestion that an opportunity should be sought during the autumn for a debate on a motion in favour of a general medical service. A discussion followed with Dr. Copeman and Sir Morton Smart, representing the Empire Rheumatism Council, and with Mr. Tom Smith and Mr. Parkinson, M.P.s sitting

for coalmining constituencies. The subject was rheumatism among coalminers. From the discussion it appeared likely that the Miners' Welfare Committee would be interested in the proposal of the Empire Rheumatism Council to establish clinics for immediate treatment of rheumatism occurring among miners. The meeting agreed that it would be better to establish one experimental clinic first to prove its value for that purpose. It was also agreed to ask the Secretary for Mines, Captain Crookshank, to receive a deputation from the Parliamentary Medical Committee, the Empire Rheumatism Council, and the M.P.s for mining constituencies. It was hoped to meet Captain Crookshank on July 12 for the purpose.

Progress of Bills

The Baking Industry (Hours of Work) Bill was read a third time by the House of Lords on June 30.

The second reading of the Nursing Homes Registration (Scotland) Bill in the House of Lords was set down for July 14.

The House of Commons on June 28 agreed to the Lords' amendments to the Street Playgrounds Bill.

The Milk (Extension and Amendment) Bill was read a second time in the House of Commons this week.

Milk: Permanent Legislation Postponed

In the House of Commons on July 4, Mr. W. S. MORRISON moved the second reading of the Milk (Extension and Amendment) Bill. He explained that the Government's proposals for permanent legislation were issued in a White Paper, and were in an advanced state of preparation, but, owing to pressure on Government business, it would not be possible to pass this legislation this session. The Government hoped to introduce the legislation early next session. It was necessary to retain the present system of assistance to the milk industry for another twelve months, and the present Bill did that. The Exchequer grants were extended for twelve months, and included that for the milk-in-schools scheme. Before the scheme began, about 900,000 children were receiving milk in schools, and it was estimated that now about 2,750,000 children were participating. Over 23,000,000 gallons of milk were consumed in England and Wales under the scheme during the year ended last September, and it was likely that in the next twelve months the consumption of milk would be 25,000,000 gallons. The scheme had undoubtedly proved its merits and the Government attached great importance to it.

It was hoped to introduce in the autumn a scheme, which had been foreshadowed in the White Paper, whereby the local authorities would be able to secure milk at reduced prices for their maternity and child welfare arrangements. Local authorities would thus be in a position to extend their present schemes and to make milk available to expectant and nursing mothers and to children under school age either free or at reduced prices as circumstances might require.

The Bill was read a second time.

Opium Imports into China

On July 4, Mr. D. ADAMS asked the Prime Minister whether his attention had been drawn to the reply by the Japanese delegate at the committee on traffic in opium at its meetings at Geneva during the present month, to the effect that 1,500 chests of Iranian opium, transported by a Japanese ship from the Persian Gulf to China, were imported by the Manchukuo Government for consumption by the registered addicts of that country; and if he would endeavour to ascertain whether the numbers of such registered addicts were increasing under Japanese guidance. Mr. BUTLER, who replied, said that this information was communicated to His Majesty's Ambassador at Tokyo by the Japanese Government. He was not in a position to make any statement on the second part of the question, nor was it likely to be possible to obtain the information desired.

On July 4, Mr. D. ADAMS further asked the Prime Minister whether his attention had been drawn to statements by the Japanese delegate at the committee on traffic in opium that of 2,900 chests ordered by Japanese interests in the first three months of 1938, 300 chests were imported by a Japanese firm through Shanghai, these 300 chests being permitted by the North China Provisional Government in conformity with existing opium conventions; and whether, in view of the fact that existing conventions appeared to allow an increasing import of dangerous drugs into parts of China under Japanese control, the British Government would press for the most rigid interpretation of these conventions, with a view to preventing a systematic demoralization of a very large number of people. Mr. BUTLER replied that this statement was made by the Japanese delegate at Geneva. As, however, he declared that the Japanese firm acted solely as shipping agents, no technical breach of the 1925 Convention had been committed by the Japanese Government. As, also, the Convention of 1931, which limited the amount of manufactured drugs that might be imported by each country during the year, did not apply to raw opium, the tightening up of existing regulations would not achieve Mr. Adams's object.

Chemotherapy: May and Baker's New Product

On July 4, Mr. D. ADAMS asked Lord Winterton if the firm of May and Baker, Limited, were obliged to refuse requests for supplies of newly discovered chemical compounds, because of the dangers involved, until further research had been carried out; and what steps he was taking to expedite the necessary research in this and similar cases. Lord WINTERTON said: It is the ordinary and necessary practice in the case of new drugs that they should, in the first place, be subjected by specialists to carefully controlled trials, as regards their value and safety, to ascertain whether the medical results warrant production on a large scale for general distribution. Mr. Adams may have particularly in mind a new compound which is being tried in the treatment of pneumonia, and about which the firm named recently published a statement that the work was still in an experimental stage. The manufacturers have not so far thought it necessary to seek the aid of the Medical Research Council in this case, but it is understood that the requisite investigations are in active progress.

Registration of Stillbirths in Scotland

In the House of Lords, on July 5, Lord ALNESS moved the second reading of the Registration of Stillbirths (Scotland) Bill, which has passed the House of Commons. He said that stillbirths to-day were registered by law in every civilized country, with the exception of Palestine, Ireland, and Scotland. The measure could be justified not only on statistical but on medical and humanitarian grounds.

Lord DAWSON OF PENN, in supporting the Bill, said that every baby who died represented a failure, and the cause could only be discovered by a study of the whys and wherefores of the failure. In 1934 43,670 infants in England died at or soon after birth, and in 1936, in Scotland, it was estimated that there were 4,000 such deaths. Civilization had brought down the death rate, but it had also brought down the birth rate, with the result that the turnover to-day was much smaller. No one wanted a hopeless infant to survive, but there were a number of potentially fit children who, through want of knowledge and care, were lost to the community. The Bill would secure that more lives were saved. The loss of children at or just after birth occurred in all classes of the community, and was therefore, in all probability, due in large part to lack of knowledge. In addition to obtaining more statistical information, it would be of advantage if the Department of Health for Scotland would institute a close study of selected groups of children, and would ask the Research Department to take action. No investigation in connexion with these deaths was worth much unless post-mortem examinations were carried out, and it would be of value if post-mortem examinations were encouraged.

Lord STRATHCONA AND MOUNT ROYAL said that the Government viewed the Bill sympathetically and would welcome its passage. He would bring Lord Dawson's observations on the question of research to the notice of the Department.

The Bill was read a second time.

No. 25.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 25, 1938.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for : (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Median values for the last 9 years for (a) and (b).

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for : (a) The 126 great towns (124 in 1937) in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns (9 in 1937) in Northern Ireland.

A dash — denotes no cases ; a blank space denotes disease not notifiable or no return available.

Disease	1938					1937 (Corresponding Week)					1929-37 (Median Value Corresponding Weeks)	
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)	(a)	(b)
Cerebrospinal fever	23	2	9	1	—	19	1	6		—		
Deaths		1	—				1	3				
Diphtheria	989	146	191	41	22	958	104	184	41	26	882	161
Deaths	22	4	6	—	—	27	1	5	1	—		
Dysentery	39	15	37		—	26	3	8	2	—		
Deaths				—	—				—	—		
Encephalitis lethargica, acute	5	—	—		—	3	—	—		—		
Deaths		2					1					
Enteric (typhoid and paratyphoid) fever	20	—	7	3	1	21	5	6	6	—	31	—
Deaths	—	—	—	—	—	1	—	—	—	—		
Erysipelas			55	6	5			66	4	1		
Deaths		1					—					
Infective enteritis or diarrhoea under 2 years												
Deaths	32	9	11	5	4	50	12	12	6	2		
Measles			173		5*			142		3		
Deaths	10	1	—	2	—	14	4	1	1	—		
Ophthalmia neonatorum	97	10	34		—	96	10	47		1		
Deaths												
Pneumonia, influenzal §	758	76	5		33	495	33	8		6	704	51
Deaths (from influenza)	20	2	2	1	1	14	6	1	1	1		
Pneumonia, primary			192	11				158	5			
Deaths		19		7	14		7		6	8		
Polio-encephalitis, acute	3	—				—	—					
Deaths		—					—					
Poliomyelitis, acute	4	—	8		—	8	—	—		—		
Deaths		—					1					
Puerperal fever	1†	1	11	5	—	34	7	13	2	—		
Deaths		1‡					1‡					
Puerperal pyrexia	187	20	30		1	139	20			—		
Deaths												
Relapsing fever	—	—			—	—	—	—		—		
Deaths												
Scarlet fever	1,765	171	355	79	78	1,631	170	379	99	44	1,628	232
Deaths	3	1	3	—	—	2	—	—	—	—		
Small-pox	—	—	—		—	—	—	—		—		
Deaths	—	—		—	—	—	—		—	—		
Typhus fever	—	—	—	—	—	—	—	—	—	—		
Deaths				—	—				—	—		
Whooping-cough			123		22			164		4		
Deaths	18	2	4	—	—	10	5	6	—	1		
Deaths (0-1 year)	301	45	58	23	21	285	51	86	29	21		
Infant mortality rate (per 1,000 live births)	49	37				47	42					
Deaths (excluding stillbirths)	4,084	789	607	160	130	3,905	752	585	185	145		
Annual death rate (per 1,000 persons living)	10.0	10.0	12.4	10.8	11.5	9.7	9.5	12.0	12.6	13.9		
Live births	7,397	1,407	949	396	254	6,902	1,294	977	346	232		
Annual rate per 1,000 persons living	18.2	17.9	19.3	26.8	22.5	17.1	16.3	20.0	23.6	22.2		
Stillbirths	276	42				296	45					
Rate per 1,000 total births (including stillborn)	36	29				41	34					

* 2 cases in Belfast alone.

† After October 1, 1937, puerperal fever was made notifiable only in the administrative county of London.

‡ Death from puerperal sepsis.

§ Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.

EPIDEMIOLOGICAL NOTES*

Enteric Fever

Twenty cases of enteric fever were notified in England and Wales during the week under review, compared with 15 in the previous week: no cases were recorded in London. In Scotland 6 cases of typhoid fever were notified—4 in Roxburgh County, and 1 each in Ayr County and Lanark County—and 1 case of paratyphoid fever, in Stirling County.

Diphtheria and Scarlet Fever

In England and Wales notifications of diphtheria rose from 889 to 989 during the week under review, and in London from 115 to 146. Increases were noted in Scotland and Northern Ireland, but in Eire there was a marked drop in notifications. Deaths in the 126 Great Towns of England and Wales fell from 29 to 22, while in London they rose from 3 to 4. Of the 22 deaths from diphtheria recorded in the 126 Great Towns 2 each occurred in Bradford (0), Liverpool (2), Wigan (0). There were 6 deaths from diphtheria in the 16 principal towns of Scotland during the week under review—4 (3) in Glasgow and 2 (0) in Edinburgh. There was an increase in the number of notifications of scarlet fever in England and Wales during the week—1,765, as against 1,746—and in London, where 171 cases were recorded, compared with 156 in the previous week. In England and Wales the figures were in excess of the median value for the last nine years, but in London they were appreciably less. There were 3 deaths from scarlet fever in the 126 Great Towns of England and Wales during the week under review, compared with 5 in the previous week; of these 1 occurred in London. Notifications in Scotland fell from 383 to 355, with 3 deaths, but in Eire and Northern Ireland they rose from 76 to 79 and 77 to 78 respectively.

Primary and Influenzal Pneumonia

Notifications of primary and influenzal pneumonia in England and Wales fell from 787 to 758 during the week under review, but in London they rose from 49 to 76; these figures were above the median values for the last nine years for England and Wales and for London. There were 20 deaths from influenza in the 126 Great Towns of England and Wales during the week under review, compared with 20 in the previous week, while in London the number remained at 2. In the West Riding (Yorks) 103 (88) cases were notified, of which 33 (27) were in Sheffield, 25 (21) in the Administrative County, 20 (13) in Leeds, 9 (6) in Halifax. In Warwickshire 39 (48) cases were notified, of which 24 (29) were in Birmingham and 10 (10) in the Administrative County. Of the 136 (167) cases reported in Lancashire 37 each occurred in Liverpool (42) and Manchester (42). Of the 20 deaths from influenza recorded in the 126 Great Towns of England and Wales during the week under review 2 each occurred in London (2), Willesden (0), Coventry (0). In Scotland 192 cases of primary pneumonia were notified, compared with 205 in the previous week, while there were 5 cases of influenzal pneumonia—as against 2 in the previous week—and 2 deaths, 1 each in Greenock (0) and Kirkcaldy (0). In Eire there were 11 (17) cases of pneumonia and 7 (8) deaths, 6 (6) of which occurred in Dublin. There were 14 (11) deaths from pneumonia in the 10 principal towns of Northern Ireland during the week—11 (10) in Belfast, 2 (0) in Portadown, and 1 (0) in Larne.

Measles and Whooping-cough

In the 126 Great Towns there were 10 deaths from measles, compared with 14 in the previous week; of these, 1 (5) occurred in London, 2 (0) in Barrow-in-Furness, and 1 each in Barnsley (0), Blackburn (0), Keighley (0), South Shields (0), Tynemouth (0), Birmingham (0). During the week 422 cases were reported from the L.C.C. elementary schools, compared with 680 in the previous week. The average daily admissions to the L.C.C. fever hospitals were 18, compared with 24 in the previous week, and the number of cases of measles under treatment in these hospitals on Friday, June 24, was 860, compared with 971 on June 17. On the same day there were under treatment in the L.C.C. fever hospitals 940 (984) cases of diphtheria, 761 (776) cases of scarlet fever, 263 (256) cases of whooping-cough. Notifications for the week ended June 25 in the eleven metropolitan boroughs in which measles is notifiable were 241 (326), distributed as follows: Battersea 34 (18), Bermondsey 11 (33), Finsbury 16 (27), Fulham 27 (30), Greenwich 47 (107), Hampstead 11 (17), Lambeth 36 (40), St. Pancras 33 (23), Shoreditch 5 (6), Southwark 13 (12), Stepney 8 (13). In Scotland 173 cases of measles were notified, compared with 258 in the previous week: the figures for Glasgow were 37 (50), Dunfermline 30 (12), Falkirk 28 (41), Dundee 22 (40), Lanark County 21 (48), Edinburgh 8 (16). During the week there were no deaths from measles in the 16 principal towns of Scotland; in Eire there were 2 deaths from measles in Dublin, and in Northern Ireland there were no deaths.

In England and Wales there were 18 (15) deaths from whooping-cough during the week, of which 2 (3) occurred in London. In Scotland 123 cases of whooping-cough were notified, compared with 119 in the previous week, while there were 4 deaths—1 each in Glasgow, Edinburgh, Motherwell and Wishaw, Hamilton. In Northern Ireland 22 (34) cases of whooping-cough were recorded, with no deaths.

Cholera

The seasonal return of cholera was recorded at Shanghai and Swatow between May 15 and 21, and at Hong Kong and Hankow between May 22 and 28. During the week ended June 25 the number of cases notified at Shanghai rose abruptly from 66 to 319 with 39 deaths; in Hong Kong 9 cases with 9 deaths were reported. In the same week in Burma 10 cases with 10 deaths were notified, in Calcutta 64 cases with 31 deaths, in Bombay (Presidency) 66 cases with 34 deaths, in Delhi 4 cases with 4 deaths. In the Central Provinces 1,237 cases with 569 deaths were reported during the week under review, in the North-West Frontier Province 163 cases with 65 deaths, in Madras (Presidency) 311 cases with 99 deaths, in the Punjab 168 cases with 101 deaths, in Sind 66 cases with 30 deaths, and in the United Provinces 2 cases in Allahabad and 7 cases with 4 deaths in Cawnpore. In French Indo-China during the same week 153 cases of cholera were reported in Annam, 184 in Tonking, 16 in Hanoi.

Plague

During the week ended June 25 in Burma 17 cases of plague with 9 deaths were reported. In British India there were no cases in Bombay or the Central Provinces, but in Madras (Presidency) there were 3 cases with 2 deaths.

Small-pox

During the week ended June 25 there was 1 case of small-pox with 1 death in Hong Kong, and in Shanghai 1 case with 1 death. In the same week in Burma 5 cases of small-pox were reported, in Calcutta 26 cases with 25 deaths, in Bombay (Presidency) 238 cases with 44 deaths, in the Central Provinces 55 cases with 3 deaths, in Madras (Presidency) 62 cases with 15 deaths, in the North-West Frontier Province 18 cases with 6 deaths, in Sind 47 cases with 6 deaths. In the same week in French Indo-China 36 cases of small-pox were reported in Tonking. During the week ended June 18, 276 cases were notified in the U.S.A.

Typhus

During the week ended June 25 in Egypt 5 cases of typhus were reported in Cairo and 97 in the provinces. In the same week 46 cases of typhus were notified in Shanghai, with 13 deaths. During the previous week in Morocco 166 cases with 21 deaths were notified, mainly distributed as follows: Marrakesh 36 cases, 2 deaths; Chaouia 28 cases, 4 deaths; 23 each in Central Atlas (6 deaths) and Dukkala (4 deaths); Rabat 17 cases; Casablanca 15 cases; Sous 6 cases. During the same week in Tunisia 77 (102) cases of typhus were reported, distributed mainly as follows: Tozeur 14, Thala 13, Susa 12, Kairwan 11, Suk-el-Arba 10, Beja 5. During the week ended June 11 in Algeria 43 cases of typhus were notified, distributed as follows: Algiers (department) 16 cases, Constantine (department) 23. In the week ended June 11 in Poland 67 (97) cases with 4 (3) deaths were reported, mainly distributed as follows: Polesia 23 cases, 1 death; Wilno 7

* Except where otherwise mentioned figures in parentheses refer to the week preceding the one under review.

cases; Wolhynia 7 cases; Bialystok 6 cases; Warsaw 5 cases, 1 death; Lwow 4 cases; Stanislawow 4 cases, 2 deaths. In Yugoslavia during the same week there were 39 cases of typhus with 2 deaths. In the U.S.A. during the week ended May 28, 26 cases were reported: Georgia 15, Alabama 3, Florida 3, Texas 2, Louisiana 1, North Carolina 1, Tennessee 1.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The Appointments Committee of the Faculty of Biology "B" will shortly proceed to appoint a University Lecturer in Anatomy, and also a University Lecturer in Physiology if a suitable candidate applies. The person appointed to the latter post will be expected to take part in teaching and research in mammalian physiology, and should possess a medical qualification. Further particulars of both appointments may be obtained from the secretary of the Appointments Committee, Dr. F. J. W. Roughton, Department of Physiology, Cambridge, to whom applications should be sent by July 25.

The Board of Management of the Frank Edward Elmore Fund will shortly proceed to the award of a studentship for medical research. It is open to male graduates of any university in any country who were born at any place within the British Empire other than Scotland. The student appointed will work in the Department of Medicine of the University of Cambridge under the direction of the Regius Professor of Physic; commencing salary £300 a year; appointment for two years in the first instance. Further information may be had from the Regius Professor, to whom applications, together with three testimonials, a statement of previous appointments, and copies of published papers, should be sent by August 1.

The Benn W. Levy research studentship in biochemistry has become vacant. Applications for its tenure should be addressed to the Professor of Biochemistry, Sir F. G. Hopkins, at the School of Biochemistry, before July 16.

At a Congregation held on June 21 the degrees of M.B., B.Chir. were conferred on H. J. Wallace.

UNIVERSITY OF BIRMINGHAM

At a Congregation held on July 2 the honorary degree of LL.D. was conferred on Dr. Robert Hutchison, President of the Royal College of Physicians of London, Sir Cuthbert Wallace, Bt., President of the Royal College of Surgeons of England, and Sir Edward Mellanby, F.R.S., Secretary to the Medical Research Council; also on Viscount Nuffield, Sir Bertram Ford, and Mr. Harry Vincent.

The following medical degrees were conferred:

M.D.—J. F. Shrewsbury (*ex officio*), J. H. Ebbs.

M.B., CH.B.—*‡W. G. Mills, †‖A. G. Arnold, †Katharine M. Banks, †‖J. D. C. Gowans, †‖D. R. Humphreys, †P. Parry, †¶A. B. Watson, J. O'D. Alexander, C. S. Ashwell, L. W. Blundell, A. E. Chaplin, Dorothy M. Cooper, T. W. B. Cull, J. E. B. Elliott, J. B. Farquhar, R. E. Gibbins, Rita Gleiberman, H. W. Hickman, J. H. Hicks, D. B. Jagger, P. H. Kendall, Dorothy E. Markham, A. T. Marshall, T. J. Montgomerie, J. F. Newman, G. R. Newns, Catherine M. Osler, Marian L. Owen, A. M. Wadsworth, J. F. Wilkinson, Winifred Wynne.

* First-class honours † Second-class honours ‡ Distinction in medicine and surgery. ‖ Distinction in medicine. ¶ Distinction in midwifery and diseases of women.

The following scholarships, medals, and prizes have been awarded:

A. E. Hills Postgraduate Scholarship in Medicine, C. Parsons. *Queen's Scholarship* (third year), M. C. Binnie; (fourth year), J. C. White; (fifth year), P. H. Davison; (final year), W. G. Mills. *Ingleby Scholarship*, A. B. Watson. *Arthur Foxwell Memorial Medal, Sampson Gamgee Memorial Medal*, and *Russell Memorial Prize*, W. G. Mills. *Priestley Smith Prize in Ophthalmology*, P. Parry. *Leith-Neumann Prizes in Pathology* (fourth year), Medical, J. C. White; Dental, I. H. Jones. *Peter Thompson Prize in Anatomy* (third year), M. C. Binnie and Evelyn M. Roe (equally divided). *John Barritt Melson Gold Medal in Physiology* (third year), M. C. Binnie.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examinations indicated:

M.D.—A. Dodd, Jannett C. Hay, C. H. Stewart-Hess.

M.B., CH.B.—[1] [2] [3]D. A. Hunt, [1] [3]E. L. Salingar. *Part III:* H. G. A. Almond, H. Alstead, H. Angelman, C. T. Baynes, Patricia M. Bennett-Jones, A. L. Black, D. W. Bracey, H. Braslavsky, B. H. Brindle, B. Carruthers, J. W. Crowther, H. Dakin, R. B. Davies, J. Donnelly, D. W. Forgan, Mary W. Gaskell, [2]K. B. Gibson, J. Griffith, Anne F. M. Heaney, D. R. Holden, R. S. Holgate, E. P. Houghton, G. O. Hughes, Brenda M. Jones, P. Jones, R. J. Keating, J. C. Kee, J. C. Kitchin, E. Leather, J. Mills, J. Moroney, A. Nachmanovitz, J. H. Newmark, P. J. O'Flynn, E. N. Owen, R. A. C. Owen, Geraldine M. H. Paul, B. I. Phillips, Hilda C. Podmore, J. G. Pritchard, W. Pritchard, E. B. Riding, D. J. Roberts, R. H. Roberts, G. M. S. Ryan, G. Sanderson, Joyce M. Scholefield, V. K. Summers, R. J. D. Temple, [2]Lucy H. E. Walker, R. Watson, J. H. D. Wetherell, R. H. White-Jones, A. H. Williams, C. J. Williams, Gwendoline Williams, I. P. Williams, Joan S. Wood, E. G. Wright, G. Wynne-Griffith, M. Wynroe. *Part II:* C. D. Alergant, G. E. Badman, [4]Frances E. Brierton, R. F. Browne, J. Collins, E. H. L. Cook, E. T. Downham, Margaret Edge, [4]T. S. Eimerl, R. M. Evans, H. B. Forrest, [4]D. M. I. Freeman, Thelma R. Gaunt, C. M. Gregory, G. C. Griffiths, H. Hall, [5]J. Harders, F. Hedley, Bessie Howarth, [5]H. Ingham, C. T. Jenkins, W. Kulke, [5]A. L. Latner, P. C. Lawson, Pearl Lyons, [4]Anne E. McCandless, D. H. MacCormack, Sylvia Makin, Eileen E. V. Martin, E. F. Mason, R. J. Miller, G. W. H. Millington, [5]J. D. Muir, T. Murtock, A. G. O'Malley, Margaret E. Parry-Edwards, R. Paul, Eleanor M. Pearson, L. G. Poole, A. G. Porterfield, T. Price, D. Prysor-Jones, V. A. Rogers, C. Rowlands, C. R. Sluming, W. O. Spence, Lucy M. Sutcliffe, Catherine S. Thomas, Megan E. Thomas, J. N. Threlfall, Olivia S. Turner, Gertrude O. W. Watson, J. A. Wethered, K. M. Willis, Emilie M. Winter. *Passed in Separate Subjects:* J. S. Hindley, G. O. Thomas, and Joan P. Thomson (Public Health), R. J. Parry and Kathleen M. Pugh-Jones (Forensic Medicine). *Part I:* I. Ansell, S. C. Barnes, H. N. C. Bleasdale, D. J. Browne, Helen M. Carmichael, J. L. Chisnall, E. A. Cookson, N. A. G. Covell, G. H. Daglish, Grace T. Dawson, L. Fletcher, W. E. Gill, J. G. Gow, H. G. Griffin, E. L. Hamm, J. B. Hannah, R. Hermon, [5]J. R. Hughes, W. J. Hughes, Jean G. Huntley, C. Ibbotson, [6]C. N. Iland, I. Levinson, M. G. McColl, J. H. H. MacRae, A. K. Mitting, J. G. Mott, G. V. Osborne, [5]W. H. Patridge, R. Paul, Lettice M. Robertson, Kate E. Rymer, T. A. Sale, [6]C. C. Slack, R. A. Smith, F. L. Thomas, E. E. Vaughan, G. R. Wadsworth, Mair Williams, [5]E. H. Winterbottom. *Passed in Separate Subjects:* Catherine W. L. Harries, S. B. Nelles, and C. W. R. Roseby (Pharmacology and General Therapeutics).

D.P.H.—*Part I:* E. W. Evans. *Part II:* A. B. Concanon, L. R. L. Edwards, [7]A. J. Gill, A. L. Smallwood, Margaret C. Winter.

DIPLOMA IN TROPICAL MEDICINE.—P. B. Pillay, M. H. Shah.

DIPLOMA IN TROPICAL HYGIENE.—F. Jacusiel, K. Jilani, J. L. Lanceley, J. R. Robertson.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part A:* B. O. Jarrette. *Part B:* G. E. Church, B. O. Jarrette, N. A. Lawler, F. Pygott.

[1] Second-class honours. [2] Distinction in Surgery. [3] Distinction in Obstetrics and Gynaecology. [4] Distinction in Public Health. [5] Distinction in Forensic Medicine and Toxicology. [6] Distinction in Pharmacology and General Therapeutics. [7] With distinction.

UNIVERSITY OF MANCHESTER

Dr. Rupert Sykes has been appointed warden of Lister House, and Dr. S. T. Cowan lecturer in bacteriology.

The Sheridan Delépine Fellowship in Preventive Medicine has been awarded to H. L. Settle, M.B., Ch.B.

UNIVERSITY OF WALES

The following candidates have satisfied the examiners at the examination indicated:

D.P.H.—*Part I:* Jennet Evans, S. H. Graham, Anne E. M. Herbert, E. W. Kinsey, Mary M. M. Llewellyn.

UNIVERSITY OF GLASGOW

At a graduation ceremony held on July 1 the following medical degrees were conferred:

M.D.—*R. MacI. Millen, *J. P. J. Paton.

M.B., CH.B.—C. A. Kilpatrick, Jean D. McMillan.

* With commendation.

UNIVERSITY OF ST. ANDREWS

At the graduation ceremony on June 30, presided over by the Vice-Chancellor, the honorary degree of LL.D. was conferred upon Edgar Douglas Adrian, M.D., F.R.C.P., F.R.S., Professor of Physiology in the University of Cambridge and Fellow of Trinity College.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—M. Becker, P. H. Davies, R. E. D. Ellis, R. P. Parkinson, T. G. Vilgoen.

MEDICINE.—J. Brewis, I. J. Mathias, O. Rochlin.

FORENSIC MEDICINE.—I. J. Mathias, O. Rochlin.

MIDWIFERY.—E. M. E. Decottignies, R. E. D. Ellis, H. Francis, N. A. Jevons, D. Macpherson, J. R. Rose, R. Rowlandson, H. Woolwich.

The diploma of the Society has been granted to O. Rochlin.

The Services

EFFICIENCY DECORATION

The King has conferred the Efficiency Decoration of the Territorial Army upon Lieutenant-Colonel J. T. Kyle and Majors D. C. Maclachlan, J. W. Wayte, R. G. Addenbrooke, and G. W. Wigg, R.A.M.C. (T.A.).

DEATHS IN THE SERVICES

Major HERBERT STUART BLACKMORE, O.B.E., R.A.M.C. (ret.), died at East Sheen on June 25, aged 51. He was born on July 2, 1886, was educated at University College, London, and took the L.D.S., R.C.S., in 1910, the M.R.C.S., L.R.C.P. in 1911, and the D.P.H. of the Royal Colleges in 1913. Entering the R.A.M.C. as lieutenant on July 28, 1911, he became major on July 28, 1923, and retired on July 28, 1931. He served in the war of 1914–18 in Iraq and Afghanistan, and on the North-West Frontier of India, receiving the O.B.E. for his services. After the war he served for seven years in the Chemical Defence Research Department, Porton, and afterwards in the Air Raid Precautions Department of the Home Office, to which he was appointed in March, 1936. He also served in 1936–7 on the British Medical Association's Committee for the Recruitment of Medical Practitioners in Time of War.

Medical News

On the occasion of the forthcoming visit of the King and Queen to France the Académie de Médecine has sent its greetings to the Royal Society of Medicine and the whole medical profession of the British Empire.

The next meeting of the Paddington Medical Society will be held at Paddington Town Hall on Tuesday, July 12, at 9 p.m., when there will be a discussion on "The Place of the Medical Practitioner in Air Raid Precautions Schemes," to be opened by Dr. N. W. Hammer, Dr. J. Nairn Dobbie, and Mr. E. W. Thorn Bannister.

The twentieth annual meeting of the Mental Hospitals Association will be held at the Guildhall on Tuesday, July 12, at 11 a.m. After the Lord Mayor of London has opened the proceedings the report of the Executive Committee will be presented and difficulties in connexion with the provisions of the Matrimonial Causes Act, 1937, will be discussed at the request of the visiting committee of the Durham County Mental Hospital. Dr. Edward Larkin will then read a paper on insulin and cardiazol treatments of schizophrenia.

The French Association for the Advancement of Science will meet in Paris from September 22 to 27 under the presidency of Professor Guilliermond. Further information can be obtained from the secretary, 28, Rue Serpente, Paris.

The report for 1937 of Papworth Village Settlement will be presented at the Park Lane Hotel, Piccadilly, W., on Tuesday, July 12, at 3.15 p.m. The Marquess of Willingdon, chairman of Papworth, will preside, and a new Papworth film will be shown. Communications should be addressed to the Organizing Secretary, Papworth Village Settlement, 16, Grosvenor Place, S.W.1.

Dr. W. J. Vickers and Dr. Carol Sims (Inner Temple) and Dr. C. F. Brockington (Middle Temple) were called to the Bar on June 29.

The issue of the *Bulletin de l'Office International d'Hygiène Publique* for May contains articles on the epidemiology of poliomyelitis; supply of infecting material for malariotherapy in England and Wales; prophylaxis of tuberculosis in schools in England and Wales, France, and Germany; legislation concerning tuberculous teachers in Norway; and comparative rural and urban mortality in France in 1933.

Several cases of psittacosis have recently occurred at La Rochelle, so that the exhibition and sale of parrots have been prohibited there.

Immunization against diphtheria with anatoxin has been made compulsory in Hungary for all children aged from 2 to 6 years, and in France for all children in the second and third years of life.

The New York banker, Mr. W. Childs, has left the University of Yale ten million dollars for cancer research.

Dr. F. de Quervain, the well-known professor of surgery and director of the surgical clinic at Berne, will retire this year and be succeeded by Dr. Hermann Matti.

Thirty radio coast stations of the United States are provided with a doctor to give medical advice to passing ships.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin;* telephone 62550 Dublin).

QUERIES AND ANSWERS

Case for Diagnosis

"FAG" has a patient aged 77. He is of spare build and has been very active all his life. Twenty years ago he suddenly became alarmed at a constant worrying colic which appeared on sitting down but disappeared when walking. It disappeared as suddenly as it came. Twelve years ago this condition reappeared: palpation, auscultation, and a variety of *x*-ray examinations revealed nothing. The tongue is clean, but there is some anorexia. Except for some constipation—relieved by salines—there is no evidence of obstruction. Three weeks ago these symptoms recurred, and the same investigations have been undertaken with the same negative results. It should be added that the patient has been a martyr to many forms of rheumatism, fibrositis, etc. "Fag" asks for suggestions as to diagnosis and treatment.

Recurrent Ulcers

Mr. C. A. MOORE (Bristol) writes: I should have no hesitation in offering to "Borderer" (*Journal*, July 2, p. 51) the suggestion that the mysterious ulcers he describes are artefacts. In two similar cases of my own each patient indignantly denied having tampered with her tissues, but in neither case was there any further ulceration after she discovered the game was up. "Borderer" may well earn the admiration, real but unexpressed, of his patient for being astute enough to make the correct diagnosis.

Income Tax

Additional Expense of Residence

"CLAIM" holds an appointment under the terms of which he must reside in the borough of X. The only house available there costs him £30 a year more in rent than one, otherwise quite as suitable, in a neighbouring borough. Can he claim to treat that £30 as an expense of his office?

*** "Claim" is assessable under Schedule E, and the allowance under that schedule is very restricted—that is, to "expenses wholly, exclusively, and necessarily incurred in the performance of the duties of the office." There is, of course, a debatable field with regard to which Rowlatt, J. said (in Nalder *v.* Walters) "it is the duty of the Commissioners to watch claims of this kind very carefully." The point raised by our correspondent has not been dealt with specifically in the courts, and he might succeed before the Commissioners; but we think that that prospect is not a good one.

Replacement of Medical Instruments

"PRACTITIONER" inquires "whether the full cost replacement of a medical instrument by one more up to date and four times as expensive is allowed."

*** The cost of *replacement* is allowable, but not the cost of *improving* the equipment—the latter expense represents further capital outlay and not running costs of the practice. Where a single transaction includes both elements—as in the case put by Practitioner—the total net cost must be divided and the replacement portion only allowed. That amount would usually be the cost of a similar instrument at the time the new one was purchased, less the amount, if any, obtained by its sale.

Irish Free State—Savings Certificates

"MEDICO" is residing, and has always resided, in the Irish Free State. He asks whether he is liable to income tax there in respect of the additions accruing on British War Savings Certificates, and if so when the liability becomes effective.

*** The interest—for the annual accretions are of the nature of interest—to such certificates are specifically exempted from British income tax, but would be liable to Irish Free State tax in the hands of a resident there. We agree with "Medico" that as the interest cannot be drawn without the encashment of the certificate itself, it does not arise to the holder so as to make him liable to assessment until the certificate is cashed. In that respect it is analogous to interest accruing on deposit receipt—the Scottish form of bank deposit—which is not liable to assessment until it is "uplifted."

Earned Income Relief

"S. J." asks what is the basis on which earned income relief is calculated. If, for instance, the gross earnings of a practice are £1,600, the expenses £900, and wear and tear allowance £100, is the one-fifth based on £1,600, £700, or £600?

*** On £600. The matter is governed by Sec. 15 of the Finance Act, 1925, which provides for "a deduction from the amount of his earned income of a sum equal to one-fifth of the amount of that income. . . ." Any other basis would be at variance with the phrase "of that income."

Life Insurance Relief

"LONICERA" took out an endowment policy on April 2, 1938, and inquires which is the earliest financial year for which he can obtain income tax relief.

*** The year ending April 5, 1938. The local inspector should be informed at once so that the appropriate deduction can be made from the second instalment of tax now becoming due.

LETTERS, NOTES, ETC.

Sterilization of Hypodermic Needles

Dr. O. ECCLES (London, W.12) writes with reference to Dr. J. Sandison Crabbe's letter in the *Journal* of May 14 (p. 1070): I recently adopted the "boiling olive oil and bread crumb method," which Sir Almroth Wright showed me many years ago, and, to my surprise, I found that the solder of the needle melted. The firm that had supplied the needles then informed me that the metal lining had a melting-point of 215° C., and advised me to use a thermometer and not to allow the temperature of the oil-bath to exceed 160° C., but difficulties in the way of high-temperature thermometry prevented me from following this advice. It would be more convenient to employ a liquid with a boiling point of about 160° C., but I cannot think of one suitable for the purpose. Alternatively some other indicator than a bread crumb might be employed. I have not tried the method of sterilizing the syringe with boiling oil for fear of cracking the glass, and I should explain that I immersed the needle in a small oil-bath. Is there not also a risk of melting the soldering material when a platinum needle is flamed?

Histidine in Peptic Ulcer

Dr. SEYMOUR W. DAVIES (Wallasey) writes: After reading Dr. A. H. Douthwaite's remarks on the treatment of peptic ulcer by histidine (*Journal*, May 28, p. 1143) I am tempted to record a case. A man in his fifties had had symptoms suggestive of duodenal ulcer since 1923. He had undergone *x*-ray examination four times, but definite signs of ulcer were lacking, though his gall-bladder was said to be pathological. Upon the advice of a consultant he was treated dietetically and medicinally as for an ulcer. In 1936, after the radiologist had reported duodenal irritation, with a normally emptying stomach, he was started upon a twenty-one-day course of histidine, with the approval of the consultant. After thirteen doses he said that he was no better, but suddenly began to improve, and, on completion of the course, said that he had never felt better. In September, 1937, he had a recurrence of pain, etc., and it was arranged that he should be *x*-rayed on September 17. Late on the night of September 16 at operation a perforated duodenal ulcer was found near the pylorus. After a somewhat stormy convalescence he recovered; he is now about 65.

Death from a Wasp Sting

Surgeon Commander A. E. P. CHEESMAN, R.N., writes from H.M. Dockyard, Malta: With reference to Dr. F. Alexander's letter in the *Journal* of June 18 (p. 1348), I would suggest that the cause of death may have been anaphylaxis. While in the West Indies a few years ago a doctor, a friend of mine, told me that he had found a man unconscious by the side of the road; there was no apparent cause for this. Eventually the man recovered, and stated that a bee had flown into his open mouth and had stung him. The mark of the puncture was on the inner surface of his lower lip without any obvious swelling. So far as I can remember the man explained that he had had a similar seizure some years before when stung by a wasp, and that "he had trouble with injections under his skin." There was no added cardiac disease or hyperpiesis in his case.

Aspirin Poisoning

Dr. M. C. ANDREWS (Wembley) writes: The note by Dr. E. Biddle in the *Journal* of June 25 (p. 1365) reminds me of two cases of aspirin poisoning which I saw about ten years ago. In each case the patient claimed to have taken 625 grains of aspirin. Both patients recovered completely in a few days, after a short period of restlessness, sweating, thirst, nausea, and oliguria. There may be something in the claim that the potency of different makes of aspirin varies!

Disclaimer

Dr J. NEIL LEITCH writes: I notice that my name was mentioned in a certain case which came before the General Medical Council recently and was reported in your *Supplement*. I had no connexion whatever with the rheumatism clinics mentioned. I met one of the gentlemen named on three occasions of short duration, during which some general conversation took place. The other gentleman I met twice, merely telling him of an opening which he might care to avail himself of. I deny absolutely the whole story put forward in the case, so far as it concerns me. The newspaper report quoted in the case did not refer to me in any way.

We have just received a well-prepared booklet on sex hormones in gynaecology and obstetrics, issued by the British Drug Houses, who will supply the booklet on application.